Operating Instructions

DVD Recorder

Model No. DMR-ES18

Panasonic®

Getting started

Recording

Playing back

Editing

Copying

Convenient functions

Reference

Region number supported by this unit

Region numbers are allocated to DVD Recorders and DVD-Video according to where they are sold.

For Asia

• The region number of this unit is "**3**".
• The unit will play DVD-Video marked with labels containing "**3**" or "**ALL**".

  Example:

  3   **ALL**   **2 3 6**

For Middle East and South Africa

• The region number of this unit is "**2**".
• The unit will play DVD-Video marked with labels containing "**2**" or "**ALL**".

  Example:
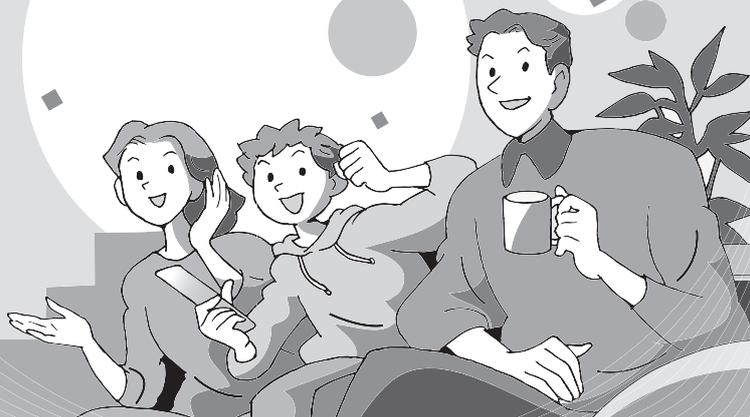
  2   **ALL**   **2 3 5**

Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.

Before connecting, operating or adjusting this product, please read the instructions completely. Please keep this manual for future reference.

DIGA

GC GCA GCS

CAUTION!

**THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR
PERFORMANCE OF PROCEDURES OTHER THAN THOSE
SPECIFIED HEREIN MAY RESULT IN HAZARDOUS
RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF.
REFER SERVICING TO QUALIFIED PERSONNEL.**

WARNING:

**TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR
PRODUCT DAMAGE,
• DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE,
  DRIPPING OR SPLASHING AND THAT NO OBJECTS
  FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE
  PLACED ON THE APPARATUS.
• USE ONLY THE RECOMMENDED ACCESSORIES.
• DO NOT REMOVE THE COVER (OR BACK);
  THERE ARE NO USER SERVICEABLE PARTS INSIDE.
  REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

CAUTION!

**• DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE,
  BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE.
  ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT
  RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO
  OVERHEATING, ENSURE THAT CURTAINS AND ANY
  OTHER MATERIALS DO NOT OBSTRUCT THE
  VENTILATION VENTS.
• DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS
  WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND
  SIMILAR ITEMS.
• DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS
  LIGHTED CANDLES, ON THE UNIT.
• DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY
  FRIENDLY MANNER.**

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace
only with the same or equivalent type recommended by the
manufacturer. Dispose of used batteries according to the
manufacturer's instructions.

THIS UNIT IS INTENDED FOR USE IN TROPICAL CLIMATES.

This product may receive radio interference caused by mobile
telephones during use. If such interference is apparent, please
increase separation between the product and the mobile
telephone.

The socket outlet shall be installed near the equipment and easily
accessible.
The mains plug of the power supply cord shall remain readily
operable.
To completely disconnect this apparatus from the AC Mains,
disconnect the power supply cord plug from AC receptacle.

```
CLASS 1
LASER PRODUCT
```

(Inside of product)

RQT9053

2

(For Middle East and South Africa)
For your safety, please read the following text carefully.
This appliance is supplied with a moulded three pin mains plug for
your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the
replacement fuse has a rating of 5-ampere and that it is approved by
ASTA or BSI to BS1362.

Check for the ASTA mark ⊛ or the BSI mark ♡ on the body of the
fuse.

If the plug contains a removable fuse cover you must ensure that it is
refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a
replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE
SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD
BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF
SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF
THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE
SOCKET.

If a new plug is to be fitted please observe the wiring code as stated
below.
If in any doubt please consult a qualified electrician.

IMPORTANT
The wires in this mains lead are coloured in accordance with the
following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings
identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal
which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal
which is marked with the letter L or coloured Brown or Red.

**WARNING: DO NOT CONNECT EITHER WIRE TO THE
EARTH TERMINAL WHICH IS MARKED WITH THE
LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED
GREEN OR GREEN/YELLOW.**

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use
Remove the connector cover.

How to replace the fuse
The location of the fuse differ according to the type of AC mains plug
(figures A and B). Confirm the AC mains plug fitted and follow the
instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A	Figure B
	Fuse cover
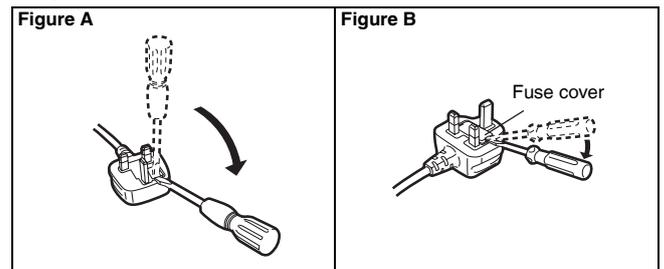
2. Replace the fuse and close or attach the fuse cover.

Figure A	Figure B
Fuse (5 ampere)	Fuse (5 ampere)

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About descriptions in these operating instructions
- e.g., For Thailand : indicates features applicable in Thailand.
  For Middle East and South Africa : indicates features
  applicable in Middle East and South Africa.
- Pages to be referred to are indicated as "➔ ○○".

Included accessories

Please check and identify the supplied accessories.
(Product numbers correct as of June 2008. These may be subject to change.)

☐	☐	☐	☐
1 Remote control (N2QAYB000237)	**2 Batteries** for remote control	**1 Audio/video cable**	**1 RF coaxial cable**

☐ **For Asia** | **For Middle East and South Africa**
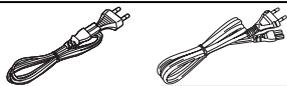
For Thailand

2 AC mains leads

For Saudi Arabia

2 AC mains leads

• For use with this unit only.
  Do not use it with other equipment.
  Also do not use the cords for other equipment with this unit.

The remote control information

■ Batteries

• Insert so the poles (+ and –) match those in the remote control.
• Do not use rechargeable type batteries.
• Do not mix old and new batteries.
• Do not use different types at the same time.
• Do not heat or expose to flame.
• Do not leave the batteries in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
• Do not take apart or short circuit.
• Do not attempt to recharge alkaline or manganese batteries.
• Do not use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

R6/LR6, AA

■ Use

Remote control signal sensor

20°
20°
30°
30°
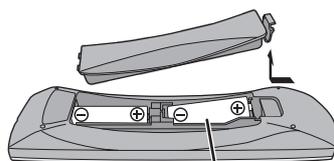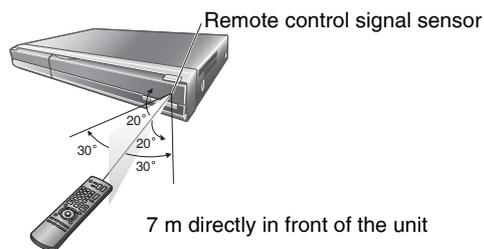
7 m directly in front of the unit

Disc handling

■ How to hold a disc

Do not touch the recorded surface.

DO   **DO NOT**
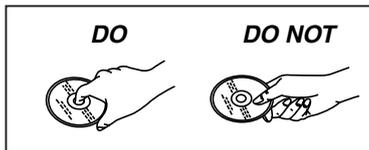
■ Concerning non-cartridge discs

Be careful about scratches and dirt.

■ If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.

DO   **DO NOT**
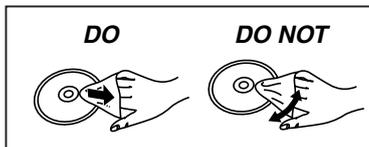
■ Handling precautions

• Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)

• Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
• Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
• Do not use scratch-proof protectors or covers.
• Do not drop stack, or impact discs. Do not place objects on them.
• Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.
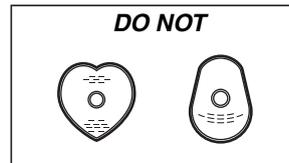
DO NOT

• Do not place in the following areas:
  – In direct sunlight.
  – In very dusty or humid areas.
  – Near a heater.
  – Locations susceptible to significant difference in temperature (condensation can occur).
  – Where static electricity or electromagnetic waves occur.
• To protect discs from scratches and dirt, return them to their cases or cartridges when you are not using them.

Unit care

The precision parts in the unit are readily affected by the environment, especially temperature, humidity, and dust. Cigarette smoke also can cause malfunction or breakdown.

• Do not place the unit on amplifiers or equipment that may become hot. The heat can damage the unit.
• Do not place any heavy objects on top of the unit.
• The unit should not be mounted in a vertical position. It's designed to operate in the horizontal position.
• Before moving the unit, ensure the disc tray is empty. Failure to do so will risk severely damaging the disc and the unit.

DO NOT
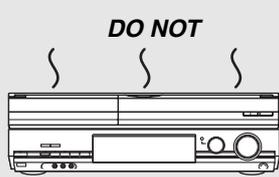
■ Cautions about condensation

Condensation can cause unreliable playback of recordings.
Condensation may form in the following cases,
• The unit is brought from cold surroundings into a well-heated room.
• The unit is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
• During rainy seasons.
In any of the above-mentioned conditions, do not operate the unit for at least 2 hours. The unit is not equipped with a moisture sensor.

■ Maintenance
To clean the unit
Wipe with a soft, dry cloth.
• Never use alcohol, paint thinner or benzine to clean this unit.
• Before using chemically treated cloth, carefully read the instructions that came with the cloth.

To clean the DVD lens
Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.
Use the **DVD lens cleaner** about once every year, depending on frequency of use and the operating environment.
Carefully read the lens cleaner's instructions before use.

DVD lens cleaner: RP-CL720E

Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.

The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.
Examples of causes of such losses are
• A disc recorded and edited with this unit is played in a DVD Recorder or computer disc drive manufactured by another company.
• A disc used as described above and then played again in this unit.
• A disc recorded and edited with a DVD Recorder or computer disc drive manufactured by another company is played in this unit.

Disc information

Discs you can use for recording and play

(○: Possible, –: Impossible)

Disc type Standard symbol	Logo	Data that can be recorded and played	Rewritable	Play on other players※1	Recording 16:9 aspect picture※2	Recording both M 1 and M 2 for bilingual broadcasts※2	Copy-once recording (CPRM)
DVD-RAM `RAM`	DVD RAM RAM4.7	Video	○	○	○	○	○ CPRM (➔ 50) compatible discs only
DVD-R `-R` before finalisation `DVD-V` after finalisation	DVD R R4.7	Video	–	○	○	–※3 (Either one)	–
DVD-R DL※4 `-R DL` before finalisation `DVD-V` after finalisation	DVD R R DL	Video	–	○	○	–※3 (Either one)	–
DVD-RW `-RW(V)` before finalisation `DVD-V` after finalisation	DVD R W	Video	○	○	○	–※3 (Either one)	–
+R `+R` before finalisation `DVD-V` after finalisation	–	Video	–	○	– (4:3 aspect)	–※3 (Either one)	–
+R DL※4 `+R DL` before finalisation `DVD-V` after finalisation	–	Video	–	○	– (4:3 aspect)	–※3 (Either one)	–
+RW `+RW`	–	Video	○	○	– (4:3 aspect)	–※3 (Either one)	–

※1 `-R` `-R DL` `-RW(V)` `+R` `+R DL`
Finalisation needed for playback on other equipment (➔ 36).
`RAM` can be played back on Panasonic DVD recorders and DVD-RAM compatible DVD players.
`-R DL`, `+R DL` or `+RW` can be played back only on equipment compatible with these discs.

※2 For further information (➔ 14, Important notes for recording)

※3 The audio selected in "Bilingual Audio Selection" (➔ 38) is recorded.

※4 You cannot continue a recording from the first layer to the second layer on dual- or double-layer discs. To record onto the second layer, you must first close the first layer using the "Close First Layer" item in DVD Management (➔ 36). You will no longer be able to record to the first layer after you do this (➔ 14). When playing a title recorded on both layers, video and audio may momentarily cut out when the unit is switching layers.

• `RAM` `-RW(V)` `+R` `+R DL` `+RW` To use a new disc, formatting is necessary (➔ 35).

• `+RW` If the disc failed to play on other equipment, we recommend you create top menu (➔ 36).

• Use of Panasonic discs is recommended.
For available recording times for different discs under different recording modes, see "Recording modes and approximate recording times" (➔ 15).

• Formatting and/or recording/initializing constraints may prevent you from playing or recording certain discs.

• Please see specifications (➔ 51) for compatible disc versions and recording speeds.

■ Recording format

This unit records video in the following formats.

DVD Video Recording format `RAM`
This is a recording method which allows you to record and edit television broadcasts and so on.
• You can delete unwanted parts of a title, create playlists, etc.
• The broadcasts that allow "One time only recording" can be recorded to a CPRM compatible disc.

DVD-Video format `-R` `-R DL` `-RW(V)`
This recording method is the same as commercially available DVD-Video.
• The broadcasts that allow "One time only recording" cannot be recorded even if using a CPRM compatible disc.
• After finalising the disc, you can play the disc on DVD players and other equipment.

+VR (+R/+RW Video Recording) format `+R` `+R DL` `+RW`
This is a method for recording moving pictures to +R/+RW discs.
You can playback such discs recorded in this method in a similar way as contents recorded in the DVD-Video format.
• The broadcasts that allow "One time only recording" cannot be recorded.
• After finalising the disc or creating the top menu, you can play the disc on DVD players and other equipment.

Note
• +R discs recorded with this unit and +R discs recorded with another Panasonic DVD Recorder may be incompatible. However, discs that are finalised are compatible and can be played.
• This unit cannot record NTSC signals to discs that already have PAL signal recordings.
• You may not be able to record depending on the condition of the discs and you may not be able to play due to the condition of the recording.

Play-only discs

Disc type	Logo	Standard symbol	Uses
DVD-Video	[DVD VIDEO] [DVD VIDEO]	DVD-V	High quality movie and music discs
DVD-RW (DVD Video Recording format)	[DVD RW]	-RW(VR)	DVD-RW video recorded on another DVD recorder • You can play programmes that allow One time only recording if they have been recorded onto a CPRM compatible disc. • By formatting (➜ 35) the disc, you can record onto it in DVD-Video format. • It may be necessary to finalise the disc on the equipment used for recording.
DVD-R DVD-R DL	[DVD R R4.7] [DVD R R DL]	DivX	• DVD-R and DVD-R DL with video recorded in DivX
CD	[COMPACT disc DIGITAL AUDIO]	CD	Recorded audio and music (including CD-R/RW※)
	–	DivX, MP3, JPEG	• CD-R and CD-R with video recorded in DivX • CD-R and CD-RW with music recorded in MP3 • CD-R and CD-RW with still pictures recorded in JPEG
Video CD	[COMPACT disc DIGITAL VIDEO]	VCD	• Recorded music and video (including CD-R/RW※)

※ Close the session after recording. Play may be impossible on some discs due to the condition of the recording.
• The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
• Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

Discs that cannot be played

• 2.6 and 5.2 GB DVD-RAM, 12 cm
• 3.95 and 4.7 GB DVD-R for Authoring
• DVD-R, DVD-R DL, DVD-RW, +R, +R DL recorded on another unit and not finalised (➜ 50)
• Discs recorded with AVCHD format
• For Middle East and South Africa DVD-Video with a region number other than "2" or "ALL"
  For Asia DVD-Video with a region number other than "3" or "ALL"
• Blu-ray, HD DVD
• DVD-Audio
• DVD-ROM, +R (8 cm), CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, etc.

Types of disc for the type of connected TV

When you use the discs recorded either PAL or NTSC, refer to this table.
(○: Possible to view, –: Impossible to view)

TV type	Disc	Yes/No
Multi-system TV	PAL	○
	NTSC	○
PAL TV	PAL	○
	NTSC	○※1 (PAL60)
NTSC TV	PAL	–
	NTSC	○※2

※1 If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.
※2 Select "NTSC" in "TV System" (➜ 39).

Remote control
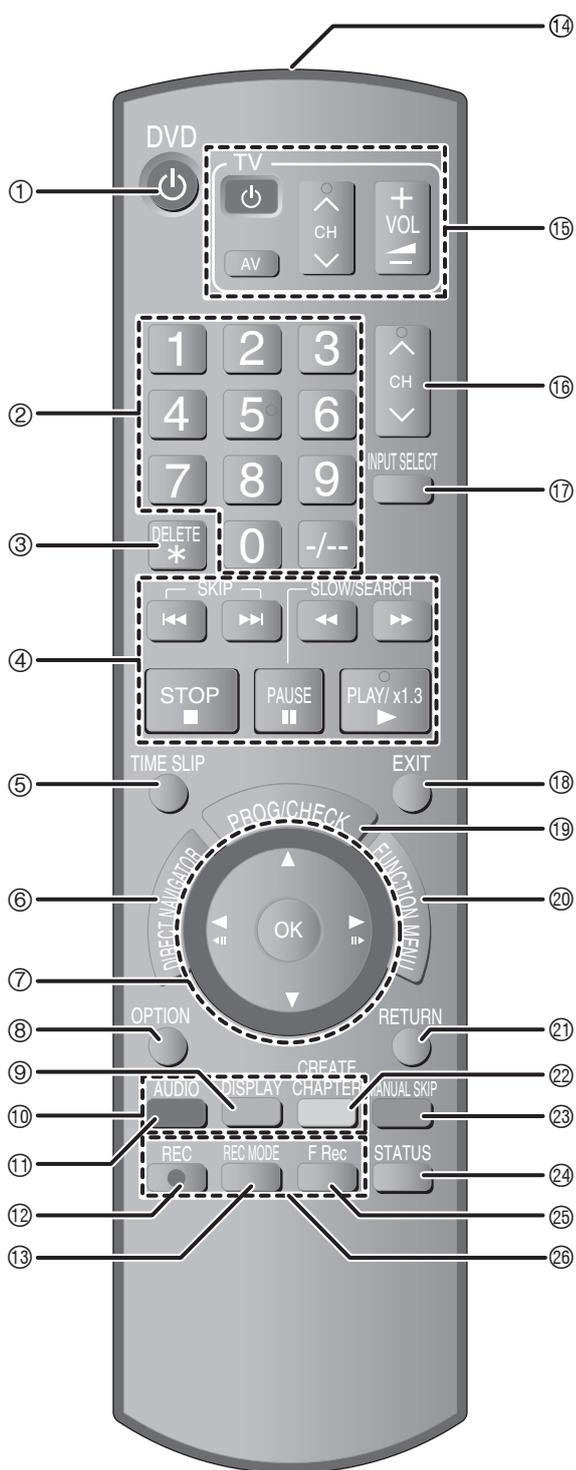
① Turn the unit on (➔ 13)

② Select channels and title numbers, etc./Enter numbers

③ To delete unnecessary recorded titles

④ Basic operations for recording and play

⑤ Skip the specified time (➔ 21)

⑥ Show Direct Navigator/Top menu (➔ 20, 22, 30)

⑦ Selection/OK, Frame-by-frame (➔ 13, 21)

⑧ Show OPTION menu (➔ 24, 30, 33)
This menu is used when playing titles and still pictures or editing titles, etc.

⑨ Show on-screen menu (➔ 26)

⑩ Manual tuning settings (➔ 37)

⑪ Select audio (➔ 20)

⑫ Start recording (➔ 16)

⑬ Change recording mode (➔ 16)

⑭ Transmit the remote control signal

⑮ Television operations (➔ 41)

⑯ Channel select (➔ 16)

⑰ Input select (AV1, AV2, AV3, AV4 or DV) (➔ 34)

⑱ Exit the menu screen

⑲ Show timer recording programme screen (➔ 18)

⑳ Show FUNCTION MENU window (➔ 28)
By using the FUNCTION MENU window you may access the main functions (Playback, Recording, etc.) quickly and easily.

㉑ Return to previous screen

㉒ Create chapter (➔ 21)

㉓ Skip approx. 1 minute forward (➔ 21)

㉔ Show status messages (➔ 27)

㉕ Start Flexible Recording (➔ 17)

㉖ Recording function

Main unit
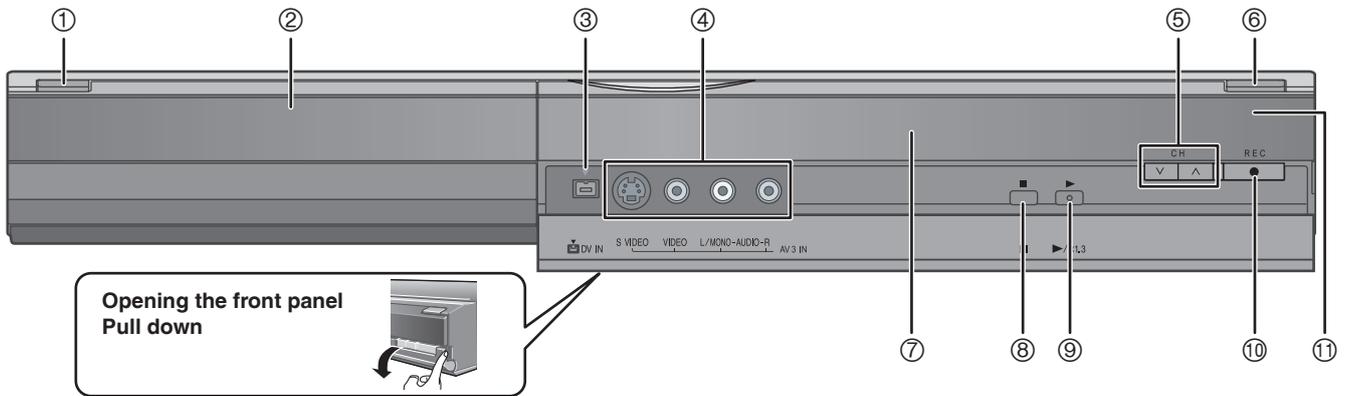
Opening the front panel
Pull down

① **Standby/on switch (Φ/I) (→ 13)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray (→ 16)
③ Connection for digital video (DV) camcorder (→ 34)
④ Connection for VCR, camcorder etc. (→ 34)
⑤ Channel select (→ 16)
⑥ Open/close disc tray (→ 16)

⑦ Display (→ below)
⑧ Stop (→ 16, 21)
⑨ Start play (→ 20)
⑩ Start recording (→ 16)/
Specify the time to stop recording (→ 17)
⑪ Remote control signal sensor

The unit's display
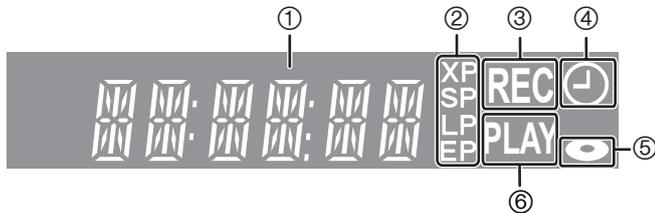
① Main display section indicator
② Recording mode indicator
③ Recording indicator
④ Timer recording indicator
⑤ Disc indicator
 • This indicator lights up when a disc that is supported by this unit is inserted.
⑥ Playing indicator

Control reference guide

RQT9053

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STEP 1 Connection

• Before connection, turn off all equipment and read the appropriate operating instructions.
• **Select the connection pattern that matches your environment from patterns A-B. Confirm connections not listed below with your dealer.**

For Middle East and South Africa
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.

When the unit is not to be used for a long time
To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when it is turned off.
[approx. 2 W (Power Save mode)]
When "Power Save" is set to "On", the "Quick Start" function does not work.

A   Connecting a television

To the aerial

Aerial cable

Television's rear panel

VHF/UHF
RF IN

AUDIO IN   VIDEO
R   L   IN

Red White Yellow

For Saudi Arabia

To household mains socket
(AC 220 to 240 V, 50/60 Hz)

AC mains lead (included)
Connect only after all other connections are complete.

For Middle East and South Africa
Use the AC mains lead that matches the socket for the area you live in.

For Asia
AC mains lead with a label is for Thailand.
AC mains lead without a label is for areas other than Thailand.

RF coaxial cable
(included)

Audio/video cable
(included)

Other connections (→ 12)

Cooling fan

Red White Yellow

RF IN
RF OUT
OPTICAL
DIGITAL AUDIO OUT
(PCM/BITSTREAM)
COMPONENT
VIDEO OUT
Y
Pₑ
Pₙ
AV1
(TV)
AV2(EXT)
AV3/AV4 IN
R–AUDIO–L   VIDEO   S VIDEO

This unit's rear panel

Connecting to a television with 21-pin Scart terminal
You can also connect with the AV1 terminal on this unit using the 21-pin Scart cable.
If your television is equipped with RGB input capability, by connecting with a fully wired 21-pin Scart cable you can see video using RGB output on this unit.
Required setting
"AV1 Output" in the Setup menu (→ 39)

B Connecting a television and VCR

To the aerial

Television's rear panel

VHF/UHF
RF IN

AUDIO IN   VIDEO
R   L   IN

Red White Yellow

For Saudi Arabia

To household mains socket
(AC 220 to 240 V, 50/60 Hz)

AC mains lead (included)
Connect only after all other connections
are complete.

For Middle East and South Africa
Use the AC mains lead that matches the
socket for the area you live in.

For Asia
AC mains lead with a label is for Thailand.
AC mains lead without a label is for areas
other than Thailand.

6

RF coaxial cable
(included)

4

5

Audio/video cable
(included)

Other connections (→ 12)

RF
IN

Y

PB

PR

OPTICAL

DIGITAL AUDIO OUT
(PCM/BITSTREAM)

COMPONENT
VIDEO OUT

RF
OUT

AV1
(TV)

AV2(EXT)

OUT

AV4 IN

R-AUDIO-L   VIDEO   S VIDEO

Red White Yellow

Red White Yellow

This unit's rear panel

AC IN ~

RF coaxial cable

1

2

Audio/video cable

3

Aerial cable

Red White Yellow

VHF/UHF
RF IN

RF OUT

AUDIO OUT VIDEO
R   L   OUT

VCR's rear panel

Connect the unit directly to the television
Video signals fed through video
cassette recorders will be affected
by copyright protection systems and
the picture will not be shown
correctly on the television.

DO NOT

Television

↑

VCR

↑

This unit

• **When connecting to a television with a built-in VCR**
Connect to the input terminals on the television side if
there are both television and VCR input terminals.

Connecting to a television with 21-pin Scart terminal
You can also connect with the AV1 terminal on this unit using the 21-pin Scart cable.
If your television is equipped with RGB input capability, by connecting with a fully wired 21-pin Scart cable you can see video using RGB output
on this unit.
Required setting
"AV1 Output" in the Setup menu (→ 39)

Connecting to a VCR with 21-pin Scart terminal
You can also connect with the AV2 terminal on this unit using the 21-pin Scart cable.
Required setting
"AV2 Input" in the Setup menu (→ 39)

Other connections

※ Leave "Yellow" unconnected.

Connecting a television with S VIDEO terminals

Television's rear panel

COMPONENT VIDEO IN
Y Pв Pв

AUDIO IN
R L

VIDEO
IN

S VIDEO
IN

Red White

Audio/video cable (included)

S Video cable

Red White

This unit's rear panel

The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the television.)

Connecting a television with COMPONENT VIDEO terminals

Television's rear panel

COMPONENT VIDEO IN
Y Pв Pв

AUDIO IN
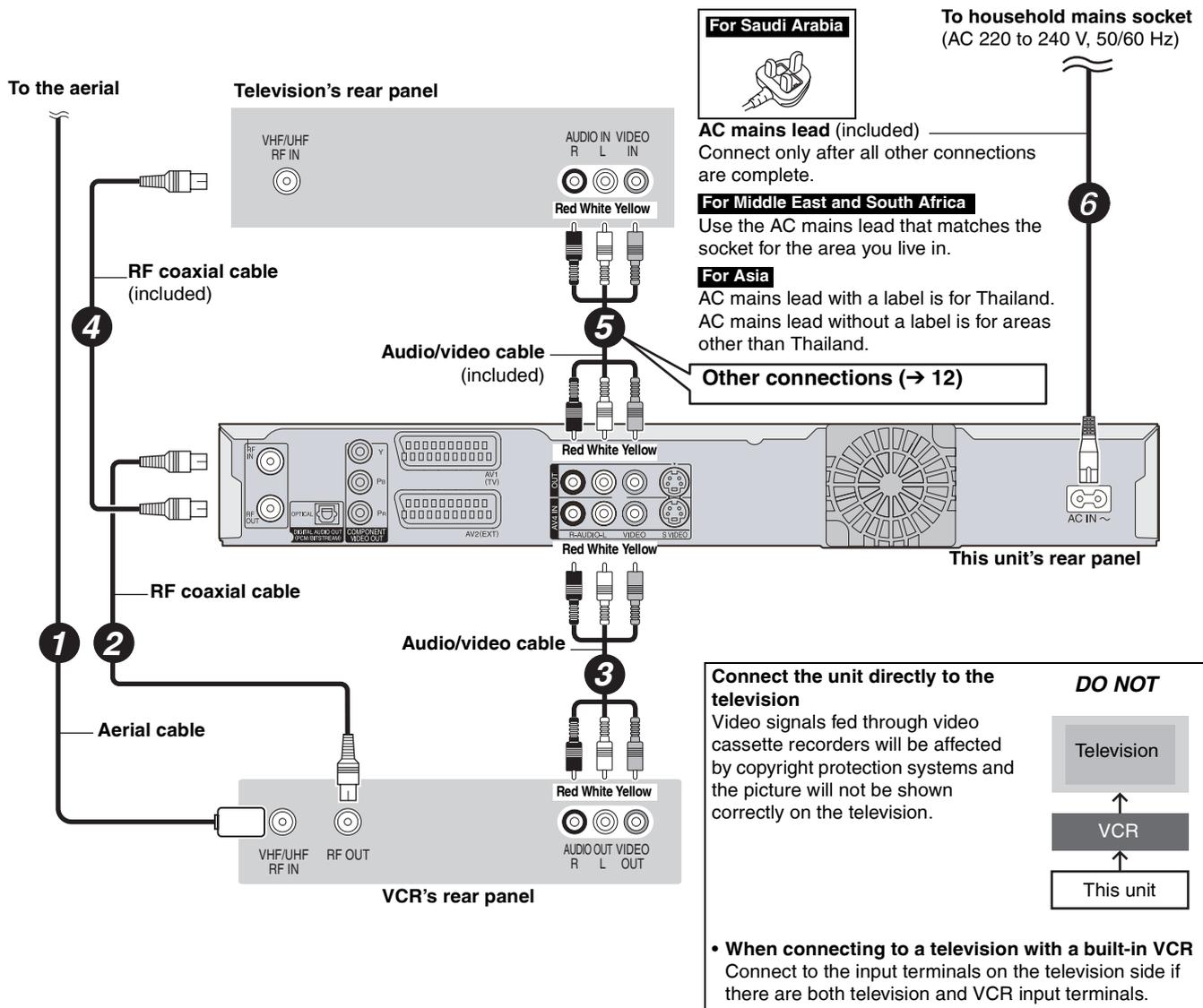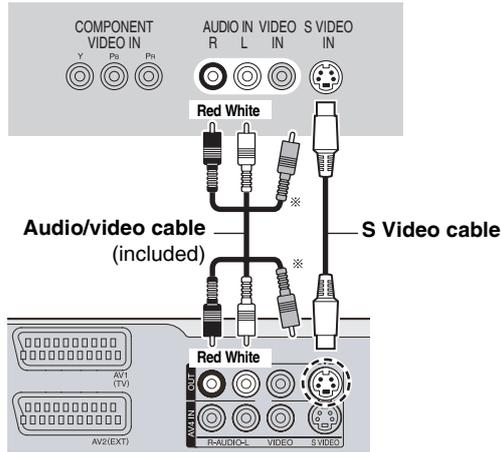R L

VIDEO
IN

S VIDEO
IN

Red White

Video cable

Audio/video cable (included)

Red White
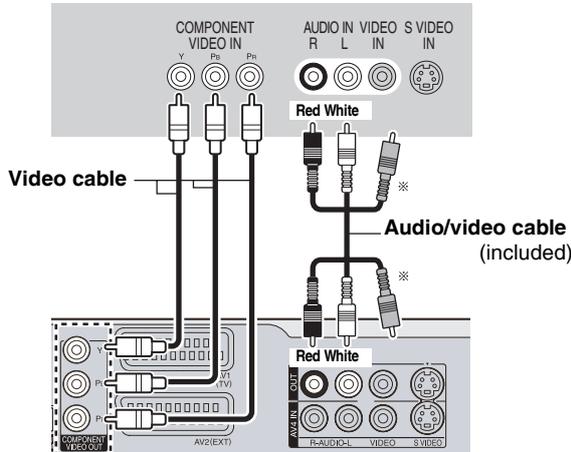
This unit's rear panel

COMPONENT VIDEO OUT terminals can be used for either interlace or progressive output (➜ 50) and provide a purer picture than the S VIDEO OUT terminal.
Connect to terminals of the same colour.

Required setting
"Progressive" setting in the Setup menu (➜ 39)

If you have a regular television (CRT: cathode ray tube)
Progressive output may cause some flickering, even if it is progressive compatible. Turn off "Progressive" if you are concerned about it (➜ 27). This is the same for multi system televisions using PAL mode.

CRT

DO NOT

COMPONENT VIDEO OUT

This unit

Progressive output
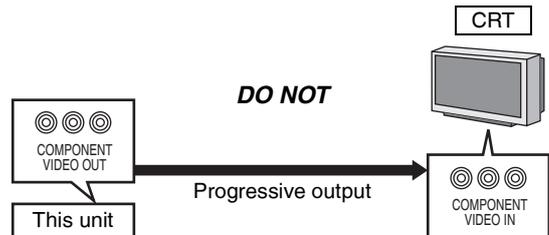
COMPONENT VIDEO IN

Connecting an amplifier or system component

■ Connecting an amplifier with a digital input terminal
• To enjoy multi-channel surround sound DVD-Video, connect an amplifier with Dolby Digital, DTS and MPEG decoders.
  Required setting
  "Digital Audio Output" in the Setup menu (➜ 38)
• Before purchasing an optical digital audio cable, check the terminal shape of the connected equipment.
• You cannot use DTS Digital Surround decoders not suited to DVD.

Amplifier's rear panel

OPTICAL IN

Insert fully, with this side up.

Do not bend cable sharply.

Optical digital audio cable
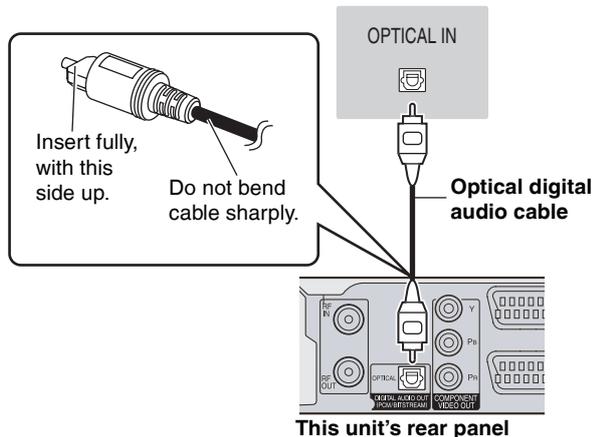
This unit's rear panel

■ Connecting a stereo amplifier

Amplifier's rear panel

AUDIO IN
R L

Red   White

Audio cable

Red   White

This unit's rear panel

ⅆ/|

⏻ DVD

DVD

TV

Numbered buttons

1 2 3
4 5 6
7 8 9
DELETE ✱ 0 -/--

SKIP   SLOW/SEARCH

STOP   PAUSE   PLAY/x1.3
■   ‖   ▶

TIME SLIP   EXIT

PROG/CHECK

OK

DIRECT NAVIGATOR   FUNCTION MENU

▲, ▼, ◀, ▶

OK

OPTION   RETURN → **RETURN**

AUDIO   DISPLAY   CREATE CHAPTER   MANUAL SKIP
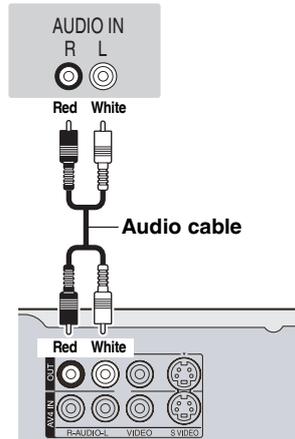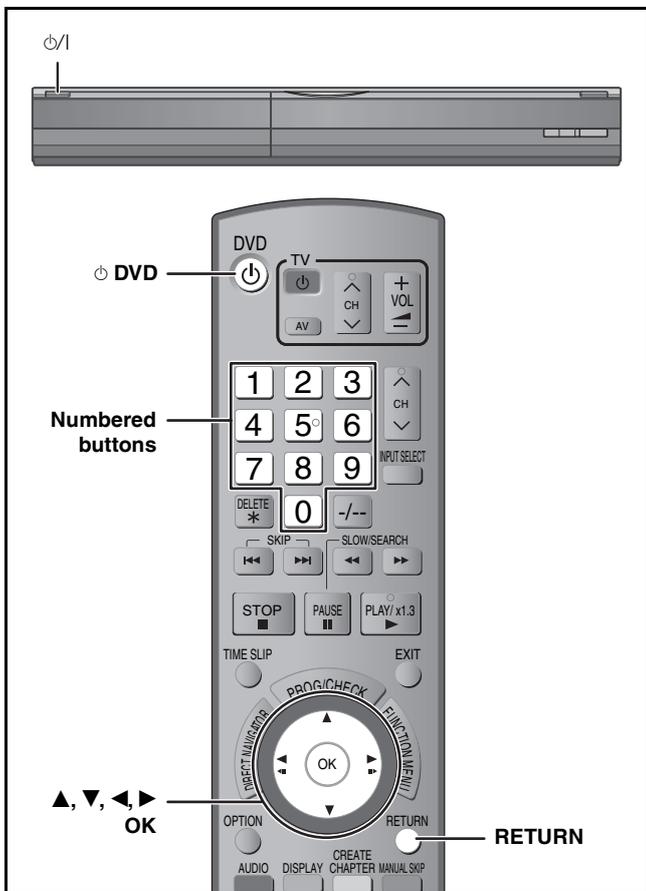
1 Turn on the television and select the appropriate AV input to suit the connections to this unit.

2 Press [⏻ DVD] to turn the unit on.

Auto-Setup starts. This takes about 5 minutes.

```
        Auto-Setup

            1

Auto-Setup in progress. Please wait.
RETURN : to cancel
        ▶ ▷ ▷

     RETURN
```

Auto-Setup is complete when you see the Clock setting menu.

```
             Clock

  Time              Date
  0 : 00 : 00       1 . 1 . 2008

 Number
 ⓪ -- ⑨
                Please set clock manually.
 CHANGE  SELECT OK : store   RETURN : leave
   OK
     RETURN
```
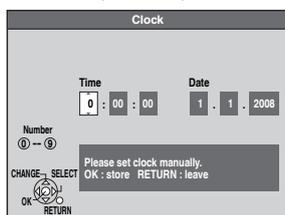
3 Select an item with [◀, ▶] and press [▲, ▼] to change the settings.

This is a 24-hour clock.
The items change as follows:

Hour ⟷ Minute ⟷ Second ⟷ Day ⟷ Month ⟷ Year

You can also use the numbered buttons for setting.
Reset the clock regularly to maintain accuracy (➔ 40).
(Monthly accuracy +/– 15 seconds.)

4 Press [OK] when you have finished the settings.

TV aspect setting screen appears.

```
             TV Aspect

  16:9 WIDE TV
               16:9

  4:3 TV
               Pan & Scan
               Letterbox

 SELECT
   OK
     RETURN
```

5 Press [▲, ▼] to select the TV aspect and press [OK].

• **16:9**:
When connected to a 16:9 widescreen television

• **Pan & Scan**:
When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture (➔ 50).

• **Letterbox**:
When connected to a 4:3 aspect television. 16:9 picture is shown in the letterbox style (➔ 50).

To stop partway
Press [RETURN].

■ **To confirm that stations have been tuned correctly (➔ 37)**

■ **To restart set up (➔ 37)**

Important notes for recording

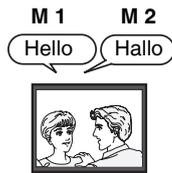|		
When recording a bilingual programme	**RAM** **Both main and secondary audio can be recorded.** You can change the audio during playback. (→ 20, "Changing audio during play") **M 1** **M 2** (Hello) (Hallo)	**-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** **Select the main or secondary audio before recording** (→ 38, "Bilingual Audio Selection") The selected audio only is recorded. **M 1** (Hello)
	If you record from external equipment –Select "M 1" or "M 2" on the external equipment.	
About the aspect when recording a programme	**-R** **-R DL** **-RW(V)** • If "Aspect for Recording" in the Setup menu is set to "Automatic" (The default setting is "Automatic" → 38), the programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.). If recorded with a different aspect, select the correct aspect ("16:9" or "4:3"). However, in the following cases, programme will be recorded in 4:3. • Programme recorded using "EP" or "FR (recordings 5 hours or longer)" recording modes will be recorded in 4:3 aspect.	**RAM** The programme will be recorded in the original aspect. **+R** **+R DL** **+RW** The programme will be recorded in 4:3 aspect.
When recording the "One time only recording" broadcasts	It is not possible to record digital broadcasts that allow "One time only recording" onto DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW or 8 cm DVD-RAM discs. Use a CPRM (→ 50) compatible DVD-RAM. **RAM** (CPRM compatible disc only) **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** ○: Can do, –: Cannot do • Even when copying to videotape the title may not be copied correctly because of the copy guard.	
Playing the disc on other DVD players	**-R** **-R DL** **-RW(V)** **+R** **+R DL** **The disc must be finalised after recording (→ 36).** It is necessary to finalise DVD-R, etc. on this unit after recording titles to them. You can then play them as a commercially sold DVD-Video. However, the discs become play-only and you can no longer record or copy.※ ※ You can record and copy again if you format DVD-RW. **Recorded to DVD-R, etc.** **Play on other DVD equipment** **Finalise** **+RW** If the disc failed to play on other equipment, we recommend you create top menu (→ 36).	
Recording to DVD-R DL and +R DL	**-R DL** **+R DL** DVD-R DL and +R DL discs have two layers of recording surface on one side. **It is not possible to record continuously from the first layer to the second layer.** Recording stops when space on the first layer becomes full. You must close the first layer to start recording on the second layer (→ 36, "Close First Layer"). Closing makes the first layer unavailable for recording (editing is still available). You cannot cancel closing. Make certain before proceeding. The second layer The available space (Disc inner side) The first layer Title1 Title2 Recording/Playback direction (Disc outer side) **It is not possible to record continuously from the first layer to the second layer.**	
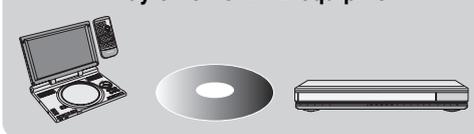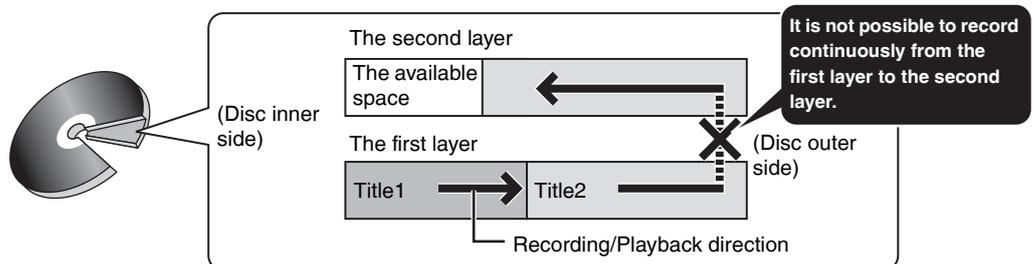
Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.
(The times provided on this chart are an estimate.)

Recording Mode	DVD-RAM		DVD-R, DVD-RW, +R, +RW 4.7 GB
	4.7 GB	9.4 GB (Double-sided※1)	
XP (High quality)	1 h.	2 h.	1 h.
SP (Standard)	2 h.	4 h.	2 h.
LP (Long play)	4 h.	8 h.	4 h.
EP (Extra long play)	8 h. (6 h.※2)	16 h. (12 h.※2)	8 h. (6 h.※2)
FR (Flexible Recording)	8 h. maximum	8 h. maximum for one side	8 h. maximum

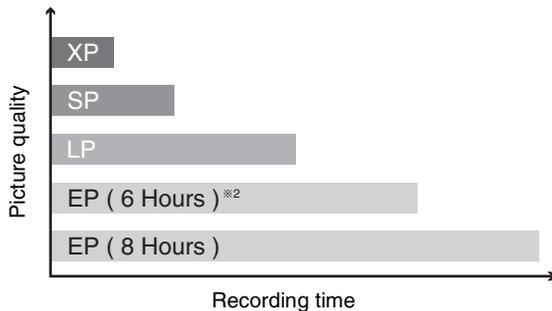| Recording Mode	DVD-R DL, +R DL※3 8.5 GB	
	First layer (L0)	Second layer (L1)
XP (High quality)	55 min.	50 min.
SP (Standard)	1 h. 50 min.	1 h. 40 min.
LP (Long play)	3 h. 40 min.	3 h. 20 min.
EP (Extra long play)	7 h. 25 min. (5 h. 30 min.※2)	6 h. 50 min. (5 h. 15 min.※2)
FR (Flexible Recording)	7 h. 25 min. maximum	6 h. 50 min. maximum

Picture quality / Recording time chart: XP, SP, LP, EP (6 Hours)※2, EP (8 Hours)

※1 It is not possible to record or play continuously from one side of a double sided disc to the other.
※2 When "Recording time in EP mode" is set to "EP (6 Hours)" in the Setup menu (→ 38).
   The sound quality is better when using "EP (6 Hours)" than when using "EP (8 Hours)".
※3 It is not possible to record continuously from the first layer to the second layer.

Note
• This unit uses variable bit rate (VBR) recording which varies the amount of data recorded to suit the images, so actual recording times and remaining recording times shown by the unit will be different. (The difference will be especially noticeable with DVD-R DL and +R DL.)
  Use a disc with plenty of remaining time to be sure.
• RAM When recording to DVD-RAM using "EP (8 Hours)" mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use "EP (6 Hours)" mode.

FR (Flexible Recording)

The unit automatically selects a recording rate between XP and EP (8 Hours) that will enable the recordings to fit in the remaining disc space with the best possible recording quality.
• You can use FR mode in timer recording (→ 18, step 3) and Flexible Recording (→ 17).

Using FR mode is convenient in these kind of situations

• When the amount of free space on the disc makes selecting an appropriate recording mode difficult
• When you want to record a long programme with the best picture quality possible

e.g., Recording a 90 minutes programme to disc

If you select XP mode
The programme will not fit one disc.
60 minutes + 30 minutes
Another disc is necessary.

If you select SP mode
The programme will fit one disc.
There will be 30 minutes remaining disc space.

If you select FR mode
The programme will fit one disc perfectly.

Disc Insertion/Ejection

When the format confirmation screen is displayed

RAM -RW(V) +R +R DL +RW
When you insert a new disc or a disc recorded on a computer or other equipment, a format confirmation screen might be displayed. Format the disc to use it. However, all the recorded contents are deleted.

Format
This disc is not formatted properly.
Do you want to format the disc now ?
Yes / No
SELECT
OK RETURN
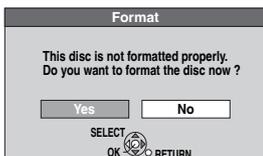
Press [◄ , ►] to select "Yes" and press [OK].

• Several steps are necessary to format a disc. Refer to "Deleting all the contents of a disc –Format Disc" (→ 35).

When removing a recorded disc

-R -R DL -RW(V) +R +R DL
When you press [▲ OPEN/CLOSE] on the main unit while stopped:
The following screen appears when you have not processed the disc for play on other equipment.

Finalise
Finalise the disc so that it can be played on other DVD players.
Note: Recording or Editing is not possible after finalising. This may take up to ○ min.
● Press the REC button to start finalise.
▲ Press the OPEN/CLOSE button to exit. This disc cannot be played on other DVD players without finalising.
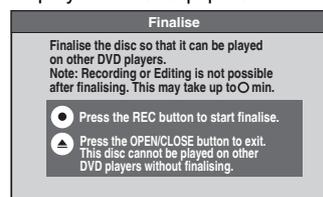
■ **When finalising the disc**
Press [● REC] on the main unit.
• You cannot stop this process once you have started it.
• If you want to provide the disc with a name or set play menu select, select "Disc Name" (→ 35) or "Auto-Play Select" (→ 36) in "DVD Management" before finalising.

■ **When opening the tray without disc finalisation**
Press [▲ OPEN/CLOSE] on the main unit.

∨ CH ∧   ▲ OPEN/CLOSE

■   ▶   ● REC

DVD

Numbered buttons

∧ ∨ CH

■ STOP   PAUSE   PLAY/x1.3 ▶   ▶

DIRECT NAVIGATOR

▲ , ▼ , ◀ , ▶
OK

RETURN

AUDIO

● REC

REC MODE

STATUS

F Rec

`RAM` `-R` `-R DL` `-RW(V)`
• You can record up to 99 titles on one disc.
`+R` `+R DL` `+RW`
• You can record up to 49 titles on one disc.

See also the notes "Important notes for recording" (→ 14).
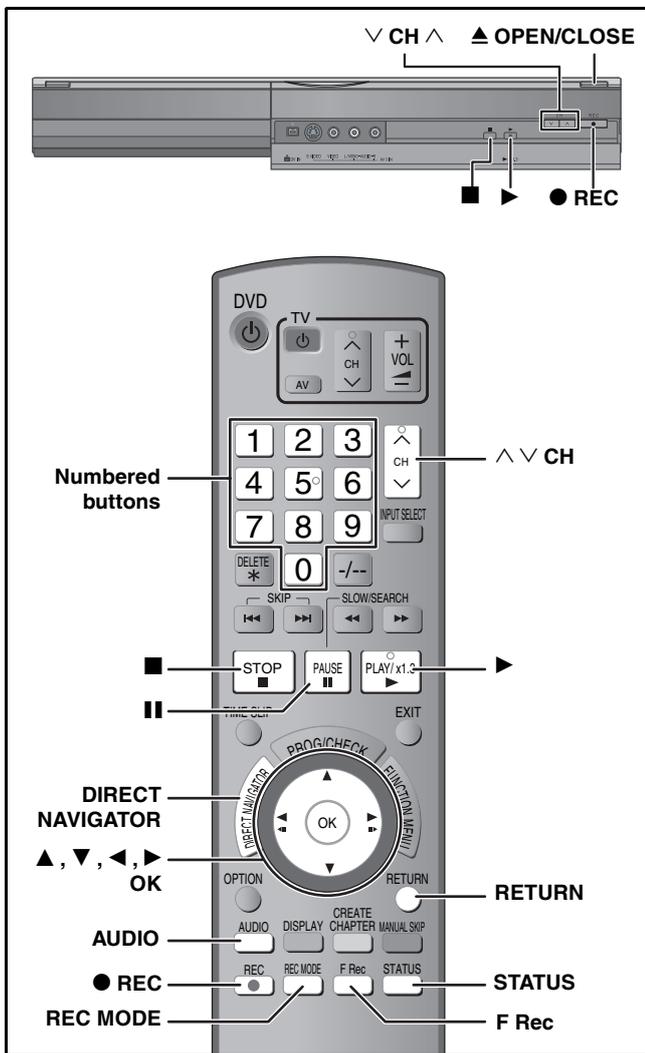
Note
• `+RW` You can create a Top Menu using "Create Top Menu" (→ 36). Recording or editing on the disc may delete the menu. In that case, create the menu again.
• `RAM` It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.

Preparation
• Turn on the television and select the appropriate AV input to suit the connections to this unit.
• Turn the unit on.

1   Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.
• Press the button again to close the tray.
• When using 8 cm DVD-RAM, or 8 cm DVD-R, remove the disc from the cartridge.

Insert label-up.   ■ Cartridge disc

Insert label-up with the arrow facing in.

Insert fully.
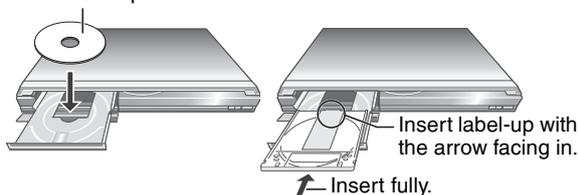
2   Press [∧ ∨ CH] to select the channel.

To select with the numbered buttons:
e.g.,   5:   [0] → [5]
       15:   [1] → [5]

3   Press [REC MODE] to select the recording mode (XP, SP, LP or EP).

Remaining time on the disc

4   Press [● REC] to start recording.

The elapsed time is shown on the display.
Recording will take place on open space on disc. Data will not be overwritten.
• You cannot change the channel or recording mode during recording.
• You can record while the unit is in standby for timer recording, but once the time for the timer recording to begin is reached, any recording taking place will stop and the timer recording will begin.
• `RAM` You can change the audio being received by pressing [AUDIO] during recording. (This does not affect the actual recording of the audio.)

■ To pause recording
Press [❚❚].
Press again to restart recording.
You can also press [● REC] to restart.
(Recorded title is not split into separate titles.)

■ To stop recording
Press [■].
• From the start to the end of the recording is called one title.
• `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`
  It takes about 30 seconds for the unit to complete recording management information after recording finishes.
In order to play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL (recorded with this unit) on other DVD players, it is necessary to finalise them (→ 36).
In order to play +RW on other players, we recommend you to create a top menu (→ 36).

Quick Start (→ 40)
1 Sec. Quick Start for Recording on DVD-RAM
From the power on, recording on DVD-RAM starts in about 1 second after the REC button is pressed. (Quick Start Mode)
It is set to "On" at the time of purchase.
• Depending on the type of TV or the connected terminal, it may take time to display the screen.

Note
Startup takes more time when:
– you play a disc or start recording to discs other than DVD-RAM.
– you want to make other operations.
– the clock has not been set.

To specify a time to stop recording –One Touch Recording

`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

During recording
Press [● REC] on the main unit to select the recording time.
• The unit's display changes as shown below.

OFF 0:30 ⟶ OFF 1:00 ⟶ OFF 1:30 ⟶ OFF 2:00
⌐ Counter (cancel) ⟵ OFF 4:00 ⟵ OFF 3:00 ⟵⌐

• This does not work during timer recordings (➔ 18) or while using Flexible Recording (➔ below).
• The unit turns off automatically after the time to stop recording is reached.

To cancel
Press [● REC] on the main unit several times until the counter appears.
• The time to stop recording is cancelled; however, recording continues.

To stop recording
Press [■].

Flexible Recording
(Recording that fits the remaining disc space)
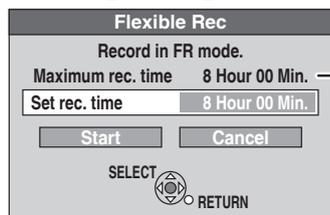
`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

The unit sets the best possible picture quality that fits the recording within the remaining disc space. The recording mode becomes FR mode. Refer to "FR (Flexible Recording)" (➔ 15).

Preparation
• Select the channel or the external input to record.

1 **While stopped**

Press [F Rec].

Flexible Rec
Record in FR mode.
Maximum rec. time   8 Hour 00 Min.
Set rec. time   8 Hour 00 Min.
Start   Cancel
SELECT
RETURN

Maximum recording time
This is the maximum recording time in EP (8 Hours) mode.

2 **Press [◄ , ►] to select "Hour" and "Min." and press [▲ , ▼] to set the recording time.**
• You can also set the recording time with the numbered buttons.
• You cannot record for more than 8 hours.

3 **When you want to start recording**

Press [▲ , ▼ , ◄ , ►] to select "Start" and press [OK].

Recording starts.
• All the recording modes from XP to EP appear in the display.

To exit the screen without recording
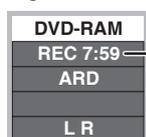Press [RETURN].

To stop recording partway
Press [■].

To show the remaining time
Press [STATUS].

e.g., DVD-RAM

DVD-RAM
REC 7:59
ARD
L R

Remaining time of recording

Playing while you are recording

`RAM`

Playing from the beginning of the title you are recording–Chasing playback

Press [►] (PLAY) during recording.

• There is no sound output while searching forward or backward.

To stop play
Press [■].

To stop recording
① Press [■] to stop playing.
② Press [■] (after 2 seconds).

To stop timer recording
① Press [■] to stop playing.
② Press [■] (after 2 seconds).
③ Press [◄ , ►] to select "Stop Recording" and press [OK].

Playing a title previously recorded while recording –Simultaneous rec and play

1 **Press [DIRECT NAVIGATOR] during recording.**

2 **Press [▲ , ▼ , ◄ , ►] to select a title and press [OK].**
• There is no sound output while searching forward or backward.

To stop play
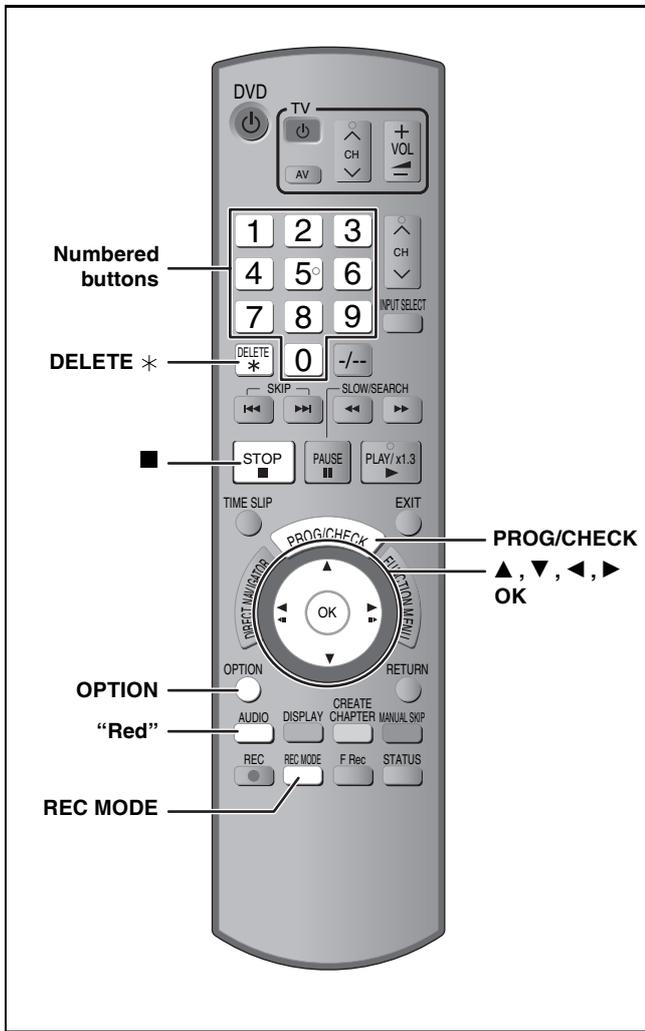Press [■].

To exit the Direct Navigator screen
Press [DIRECT NAVIGATOR].

To stop recording
① Press [■] to stop playing.
② Press [DIRECT NAVIGATOR] to exit screen.
③ Press [■].

To stop timer recording
① Press [■] to stop playing.
② Press [DIRECT NAVIGATOR] to exit screen.
③ Press [■].
④ Press [◄ , ►] to select "Stop Recording" and press [OK].

Numbered buttons

DELETE ✳

■

STOP

PROG/CHECK

▲ , ▼ , ◄ , ►

OK

OPTION

"Red"

REC MODE

RAM -R -R DL -RW(V) +R +R DL +RW

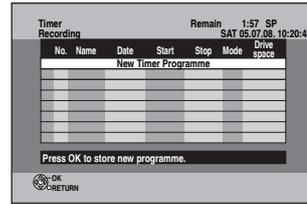**See also the notes "Important notes for recording" (→ 14).**

Preparation
• Turn on the television and select the appropriate AV input to suit the connections to this unit.
• Check the time on the unit is correct.
• Insert a disc (→ 16).

Manually programming timer recordings

You can enter up to 16 programmes up to a month in advance. (Each daily or weekly programme is counted as one programme.)

1 Press [PROG/CHECK].

```
Timer                           Remain    1:57  SP
Recording                                 SAT 05.07.08. 10:20:42
      No.  Name   Date   Start   Stop   Mode  Drive
                                             space
                  New Timer Programme

Press OK to store new programme.
     OK
     RETURN
```

2 Press [▲ , ▼] to select "New Timer Programme" and press [OK].

3 Press [►] to move through the items and change the items with [▲ , ▼].

```
Timer                           Remain    1:57  SP
Recording                                 SAT 05.07.08. 10:20:42

      Name      Date      Start    Stop    Mode
  1 ARD      5. 7. SAT   22:00    22:30    SP  ►
                                          Programme Name
```

• Press and hold [▲ , ▼] to alter Start (Start time) and Stop (Finish time) in 30-minute increments.
• You can also set Name (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
• You can also press [REC MODE] to change the recording mode.
• **Date**

```
┌→ Date:         Current date up to one month later minus
│                one day
↓↑
│   Daily timer:  SUN-SAT → MON-SAT → MON-FRI
↓↑
└→ Weekly timer: SUN → --- → SAT
```

• **To enter programme name**
Press [◄ , ►] to select "Programme Name" and press [OK] (→ 28, Entering text).

4 Press [OK].

The settings are stored and the programme goes to timer recording standby.
The timer icon is displayed in left column.

```
Timer
Recording

       No.    Name
Timer icon ⏲  01    ARD
```
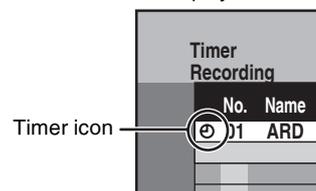
"⏲" lights on the unit's display to indicate timer recording standby has been activated.

```
 No.  Name    Date     Start   Stop   Mode  Drive
                                            space
⏲ 01  ARD    5. 7. SAT  22:00   22:30   SP    OK
             New Timer Programme
```

When "!" appears, make sure the disc has a sufficient space.

Repeat steps 2–4 to programme other recordings.

To exit the timer recording list
Press [PROG/CHECK].

To cancel recording when recording has already begun

1 **When this unit is on**
   Press [■].
   The confirmation screen appears.

2 **Press [◄ , ►] to select "Stop Recording" and press [OK].**
   Recording stops and the timer recording is cancelled. (Daily and weekly timers remain and timer recording will start as programmed.)

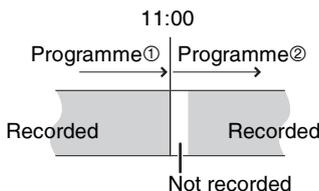## To release the programme from recording standby

Even when the unit is turned off, you can display the timer recording list by pressing [PROG/CHECK].

1 **Press [PROG/CHECK].**

2 **Press [▲ , ▼] to select the programme and press the "Red" button.**
   The timer icon (→ 18, right) disappears.
   • **To put the programme on recording standby again**
   Perform step 2 again before the programme start time to put the programme on recording standby. Timer recording will work only if the timer icon is displayed.

Notes on timer recording

• When an inserted disc has been recorded with the signal system different from the one set in the default TV system (→ 39), this unit does not enter the timer recording standby and the timer recording will not start.
• Timer recordings are activated regardless of whether the unit is turned on/off.
• "⏱" flashes on the unit's display for about 5 seconds when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray).
• Timer recordings begin when the set time is reached even when recording or when playing.
• If the unit is turned on when timer recording begins, it remains turned on after recording finishes. It does not turn off automatically. You can turn the unit off during timer recording.
• If the unit is not put in the timer recording standby mode at the last 10 minutes before the programmed timer recording starting time, "⏱" flashes on the unit's display. In this case, insert a recordable disc to put the unit in the timer recording standby mode.
• If you are making consecutive recordings that will start one after the other, the beginning of the later programme cannot be recorded.

e.g., Programme① 10:00–11:00
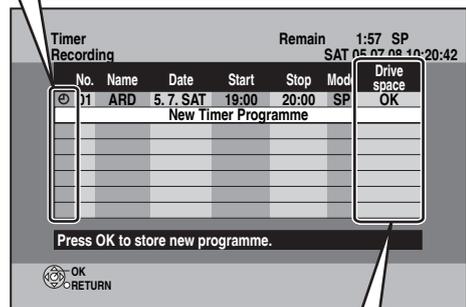   Programme② 11:00–12:00

```
                    11:00
      Programme① | Programme②
          ──────→ | ──────→

      Recorded    |    Recorded

              Not recorded
```

• If the actual broadcasting times of timer recordings overlap, the recording that starts first always has priority, and the recording of the later programme will start only after the first timer recording has finished.

Check, change or delete a programme

Even when the unit is turned off, you can display the timer recording list by pressing [PROG/CHECK].

Press [PROG/CHECK].

Icons

⏱ Timer recording standby is activated.

● This programme is currently recording.

🌑 The times overlap those in another programme. Recording of the programme with the later start time starts when the earlier programme finishes recording.

➖ You stopped a weekly or daily timer recording. The icon disappears the next time the timer programme starts recording.

🔳 The disc was full so the programme failed to record.

◿ The programme was copy-protected so it was not recorded.

✖ The programme did not complete recording because the disc is dirty or some other reason.

		Timer Recording		Remain 1:57 SP SAT 05.07.08 10:20:42			
	No.	Name	Date	Start	Stop	Mode	Drive space
⏱	01	ARD	5. 7. SAT	19:00	20:00	SP	OK
		New Timer Programme					

Press OK to store new programme.

OK
RETURN

Message displayed in the "Drive space" line
   OK: Displayed if the recording can fit in the remaining space.
   → (Date): For recordings made daily or weekly, the display will show until when recordings can be made (up to a maximum of one month from the present time) based on the time remaining on the disc.
   !: It may not be possible to record because:
   • no disc is inserted
   • the disc is write-protected
   • there is no more space left
   • the number of possible titles has reached its maximum.
   • the inserted disc has been recorded with the signal system different from the signal system of TV system signal set on this unit.

■ To change a programme
Press [▲ , ▼] to select the programme and press [OK] (→ 18, step 3).
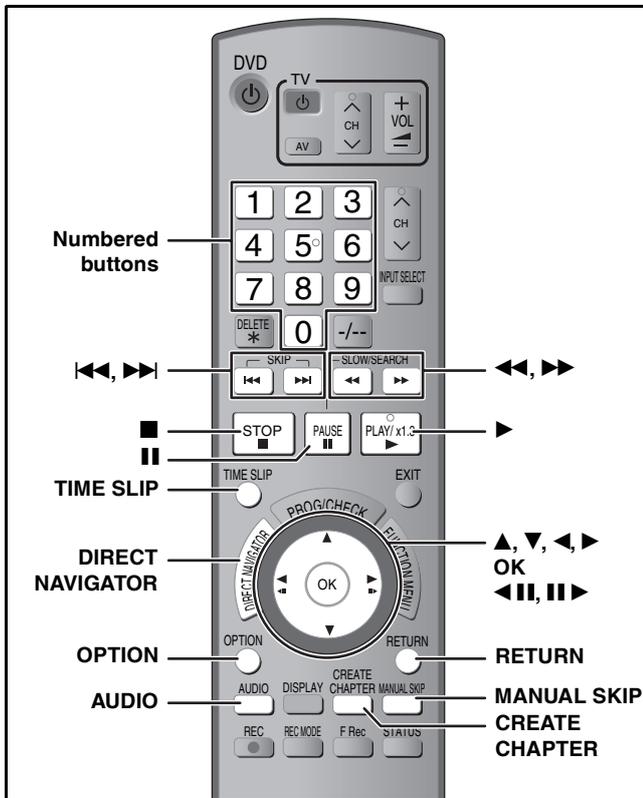
■ To delete a programme
Press [▲ , ▼] to select the programme and press [DELETE ✳].
You can also delete a programme with the following steps
1 Press [▲ , ▼] to select the programme and press [OPTION].
2 Press [▲ , ▼] to select "Delete" and press [OK].

■ To exit the timer recording list
Press [PROG/CHECK].

• Programmes that failed to record are deleted from the timer recording list at 4 a.m. two days later.

Playing discs

Numbered buttons

◄◄, ►►► (SKIP)

■ (STOP)

❚❚ (PAUSE)

TIME SLIP

DIRECT NAVIGATOR

OPTION

AUDIO

◄◄, ►► (SLOW/SEARCH)

► (PLAY)

▲, ▼, ◄, ►
OK
◄❚❚, ❚❚►

RETURN

MANUAL SKIP
CREATE CHAPTER

Preparation
• Turn on the television and select the appropriate AV input to suit the connections to this unit.
• Turn on this unit.

1 Insert a disc (➔ 16).

2 Press [►] (PLAY).

[RAM] [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW] [-RW(VR)]
Play starts from the most recently recorded title.

[DVD-V] [VCD]
Play starts from the point specified by the disc.

[CD]
Play starts from the beginning of the disc.

Menu operation for other type of contents
• DivX (➔ 22)
• MP3 (➔ 23)
• Still pictures (JPEG) (➔ 23)

■ When a menu screen appears on the television
[DVD-V]
Press [▲, ▼, ◄, ►] to select the item and press [OK].
Some items can also be selected using the numbered buttons.
• If you are instructed to press the "ENTER" button by the menu screen or the disc's instruction document, press [OK].

[VCD]
Press the numbered buttons to select the item.
e.g., 5: [0] ➔ [5]   15: [1] ➔ [5]

• **To return to the menu screen**
[DVD-V]
1 Press [OPTION].
2 Press [▲, ▼] to select "Top Menu" or "Menu" and press [OK].
[VCD]
Press [RETURN].

> **Note**
> • Discs continue to rotate while menus are displayed. Press [■] when you have finished playback to protect the unit's motor, your television screen and so on.
> • The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

[RAM] [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW] [-RW(VR)]
Simply select the recorded programmes (titles) you want to play from the menu.

1 Press [DIRECT NAVIGATOR].
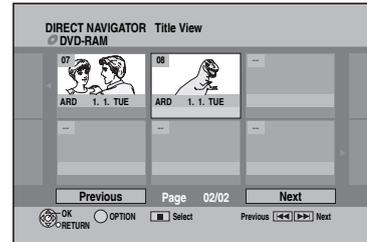
2 Press [▲, ▼, ◄, ►] to select the title and press [OK].
You can also select titles with the numbered buttons.
e.g., 5: [0] ➔ [5]   15: [1] ➔ [5]

To show other pages
Press [◄◄] (Previous) or [►►►] (Next).

To exit the screen
Press [DIRECT NAVIGATOR].

Direct Navigator screen icons

|	
●	Currently recording.
🔒	Title protected.
▱	Title that was not recorded due to recording protection (Digital broadcasts etc.)
✕	Title cannot be played because data is damaged.
🖾	Title with "One time only recording" restriction
Ⓝ **(NTSC)** Ⓟ **(PAL)**	Title recorded using a different encoding system from that of the TV system currently selected on the unit.

> **Note**
> • [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW] The unit stops playing a disc when timer recording starts.
> • [RAM] Press [►] (PLAY) when you wish to start playing the disc while recording (➔ 17, "Chasing playback").

Changing audio during play

Press [AUDIO].

[RAM] [-RW(VR)] [VCD] and DivX

LR → L → R
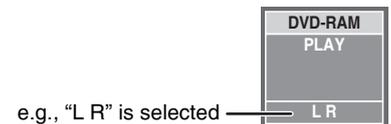
e.g., "L R" is selected

[DVD-V]
You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language.
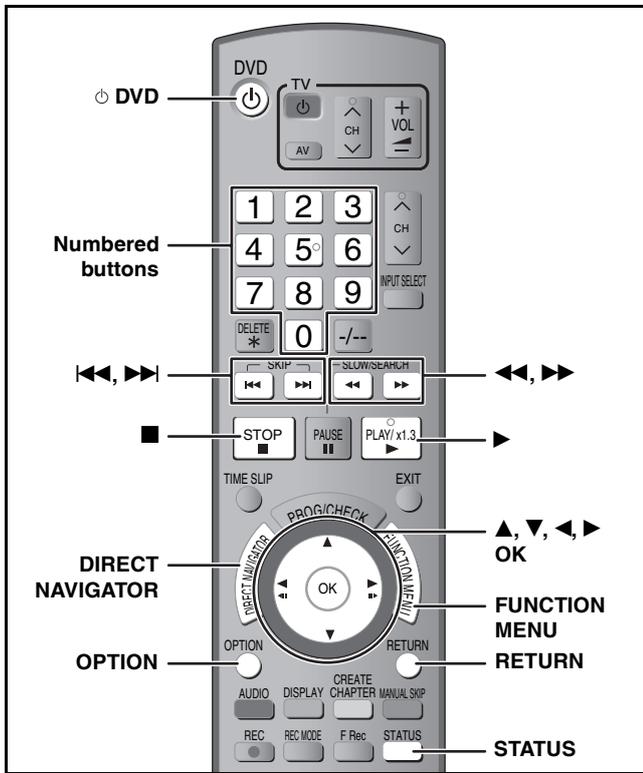

Soundtrack ⬍ 1 ENG 🔊 Digital 3/2.1ch

e.g., [DVD-V] English is the selected language (➔ 26, Soundtrack).

Operations during play

|	
Stop	**Press [■].** The stopped position is memorized. **Resume play function** Press [▶] (PLAY) to restart from this position. The stopped position is cleared when: – you press [■] several times. – you open the tray. – CD VCD and MP3/DivX you turn the unit off.
Pause	**Press [❙❙].** Press again or press [▶] (PLAY) to restart play.

Search	**Press [◀◀] or [▶▶].**
	• The speed increases up to 5 steps (+R +R DL +RW up to 3 steps).
	• Press [▶] (PLAY) to restart play.
	• Audio is heard during first level search forward.
	  – CD and MP3
	    Audio is heard during all levels of search.
	  – DivX
	    Audio is not heard during all levels of search.
	• Depending on the disc, searching may not be possible.

Skip	**During play or while paused, press [❙◀◀] or [▶▶❙].** The unit will skip titles, chapters, or tracks according to the number of times the button is pressed and play will begin. • DivX Backward direction [❙◀◀] only.

Starting from a selected item
(excluding DivX)
	Press the numbered buttons.
	Play starts from the selected title, chapter or track.
	MP3/JPEG
	  e.g., 5: [0] → [0] → [0] → [5]
	       15: [0] → [0] → [1] → [5]
	
	Other discs
	Input a 2-digit number
	  e.g., 5: [0] → [5]
	       15: [1] → [5]
	
	DVD VIDEO RAM
	
	• This works only when stopped (the above screen is displayed on the television) with some discs.
	• VCD (with playback control)
	  If you press the numbered buttons while stopped (the above screen is displayed on the television) you can cancel PBC. (Elapsed play time appears on the unit's display.)

Quick View RAM	**Press and hold [▶] (PLAY/x1.3).** Play speed is quicker than normal. • Press again to return to normal speed.
Slow-motion RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) VCD	**While paused, press [◀◀] or [▶▶].** • The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play. • VCD Forward direction [▶▶] only. • The unit will pause if slow-motion play is continued for approximately 5 minutes (excluding DVD-V VCD).
Frame-by-frame RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) VCD	**While paused, press [◀❙❙] or [❙❙▶].** • Each press shows the next frame. • Press and hold to change in succession forward or backward. • Press [▶] (PLAY) to restart play. • VCD Forward direction [❙❙▶] only.
Skipping the specified time (Time Slip) RAM -R -R DL -RW(V) +R +R DL (This function does not work with finalised discs.) +RW -RW(VR)	**1 Press [TIME SLIP].** **2 Press [▲, ▼] to select the time and press [OK].** Play skips the specified time. • Each time you press [▲, ▼], the time increases [▲] or decreases [▼] by 1 minute intervals. (Press and hold for 10-minute intervals.)	This automatically disappears after approximately 5 seconds. To show the screen again press [TIME SLIP] again. –5 min
Manual Skip RAM -R -R DL -RW(V) +R +R DL (This function does not work with finalised discs.) +RW -RW(VR)	**Press [MANUAL SKIP].** Play restarts from approximately 1 minute later.	
Create Chapter RAM (→ 30, Title/Chapter)	**Press [CREATE CHAPTER].** Chapters are divided at the point pressed. • Press [❙◀◀, ▶▶❙] to skip to the start of a chapter.	

RQT9053

Playing DivX, MP3 and still pictures (JPEG)

Ò DVD

TV

Numbered buttons

1 2 3
4 5 6
7 8 9
DELETE ✱ 0 -/--

SKIP ⏮, ⏭
SLOW/SEARCH ◀◀, ▶▶

■ STOP
PAUSE
PLAY/ x1.3 ▶

TIME SLIP
EXIT

PROG/CHECK
▲, ▼, ◀, ▶
OK

DIRECT NAVIGATOR

FUNCTION MENU

OPTION
RETURN

CREATE CHAPTER   MANUAL SKIP
AUDIO   DISPLAY

REC   REC MODE   F Rec   STATUS
STATUS

Showing the menu screen

`CD`
1 Insert the disc.
2 **If the disc contains different file types**

```
            Playback
      Play Mode:DivX
      Select file type.

      DivX
      JPEG
      MP3
```
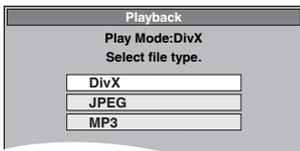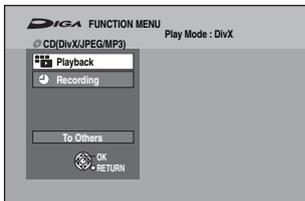
Press [▲, ▼] to select the item and press [OK].
Otherwise,
Press [DIRECT NAVIGATOR].

■ Changing the file type to play

`CD`
1 **Press [RETURN] several times to exit the menu.**
2 **Press [FUNCTION MENU].**

```
  DIGA FUNCTION MENU
                    Play Mode : DivX
  CD(DivX/JPEG/MP3)

  Playback
  Recording


  To Others
        OK
        RETURN
```

3 **Press [▲, ▼] to select "Playback" and press [OK].**
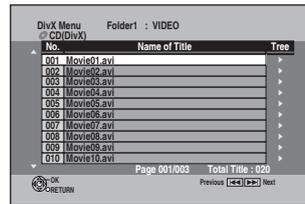4 **Press [▲, ▼] to select the item and press [OK].**

Playing DivX video contents

`-R` `-R DL` `CD`
You can play DivX video contents recorded with a computer onto DVD-R, DVD-R DL and CD-R/CD-RW.

1 Show DivX Menu screen.

(→ left, Showing the menu screen)

```
DivX Menu      Folder1 : VIDEO
CD(DivX)
No.          Name of Title          Tree
001  Movie01.avi                     ▶
002  Movie02.avi                     ▶
003  Movie03.avi                     ▶
004  Movie04.avi                     ▶
005  Movie05.avi                     ▶
006  Movie06.avi                     ▶
007  Movie07.avi                     ▶
008  Movie08.avi                     ▶
009  Movie09.avi                     ▶
010  Movie10.avi                     ▶
                Page 001/003    Total Title : 020
    OK
    RETURN                  Previous ⏮ ⏭ Next
```

• Files are treated as titles.

2 Press [▲, ▼] to select the title and press [OK].

Play starts on the selected title.
• You can also select the title with the numbered buttons.

e.g., 5: [0] → [0] → [5]
      15: [0] → [1] → [5]

To stop playing
Press [■].

To show other pages
Press [⏮, ⏭].
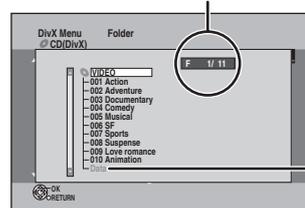
To exit the screen
Press [DIRECT NAVIGATOR].

`Note`
• Picture sizes set at the recording time may prevent the unit from showing pictures in the adequate aspect. You may be able to adjust the aspect through the TV.
• Successive play is not possible.

Using the tree screen to find a folder

1 **While the file list is displayed**
   Press [▶] while a title is highlighted to display the tree screen.
   F: Selected folder no./Total folder no. including DivX title.

```
DivX Menu      Folder
CD(DivX)
                    F  1/ 11

VIDEO
001 Action                          You cannot select folders
002 Adventure                       that contain no
003 Documentary                     compatible files.
004 Comedy
005 Musical
006 SF
007 Sports
008 Suspense
009 Love romance
010 Animation
Data
    OK
    RETURN
```

2 **Press [▲, ▼] to select a folder and press [OK].**
   The file list for the folder appears.

To return to the previous screen
Press [RETURN].

Playing MP3 files

`CD`

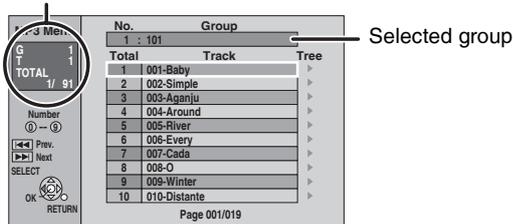You can play MP3 files recorded with a computer onto a CD-R/CD-RW.

1 Show MP3 Menu screen.

(➔ 22, Showing the menu screen)

G: Group no.
T: Track no. in the group
TOTAL: Track No./Total tracks in all groups

Selected group

• Files are treated as tracks and folders are treated as groups.

2 Press [▲, ▼] to select the track and press [OK].

Play starts on the selected track.

• "☞" indicates the track currently playing.
• You can also select the track with the numbered buttons.

  e.g.,   5:   [0] ➔ [0] ➔ [0] ➔ [5]
           15:   [0] ➔ [0] ➔ [1] ➔ [5]

To stop playing
Press [■].

To show other pages
Press [|◄◄, ►►|].
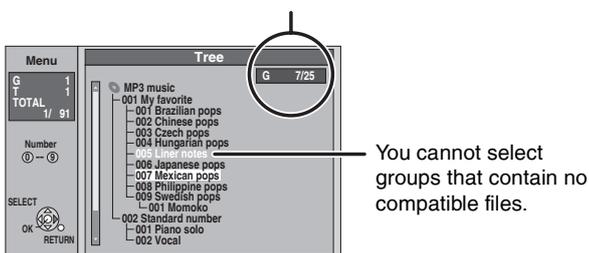
To exit the screen
Press [DIRECT NAVIGATOR].

Using the tree screen to find a group

1 While the file list is displayed
Press [►] while a track is highlighted to display the tree screen.

Selected group No. /Total groups
If the group has no track, "- -" is displayed as group number.

You cannot select groups that contain no compatible files.

2 Press [▲, ▼] to select a group and press [OK].
The file list for the group appears.

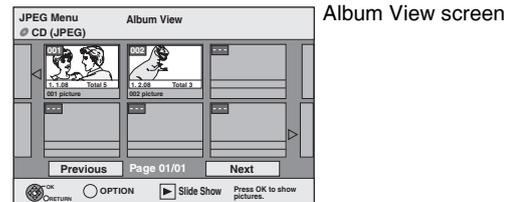**To return to the previous screen**
Press [RETURN].

Playing still pictures

`CD`

You can play still pictures recorded with a computer onto a CD-R/CD-RW.

1 Show Album View screen.

(➔ 22, Showing the menu screen)

Album View screen

To show other pages
Press [▲, ▼, ◄, ►] to select "Previous" or "Next" and press [OK].
• You can also press [|◄◄, ►►|] to show other pages.

2 Press [▲, ▼, ◄, ►] to select the album and press [OK].
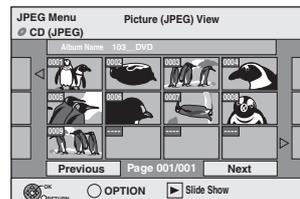
You can also select album with the numbered buttons.

e.g.,
5:      [0] ➔ [0] ➔ [5]
15:     [0] ➔ [1] ➔ [5]
115:    [1] ➔ [1] ➔ [5]

3 Press [▲, ▼, ◄, ►] to select the still picture and press [OK].

You can also select still pictures with the numbered buttons.

e.g.,
5:    [0] ➔ [0] ➔ [0] ➔ [5]   115:   [0] ➔ [1] ➔ [1] ➔ [5]
15:   [0] ➔ [0] ➔ [1] ➔ [5]   1115: [1] ➔ [1] ➔ [1] ➔ [5]

• Press [◄, ►] to display the previous or next still picture.
• Useful functions during still picture play (➔ 24)

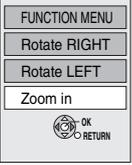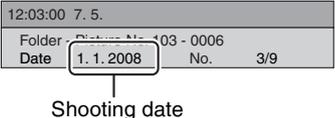**To return to the Album View screen or Picture (JPEG) View screen**
Press [RETURN].

To exit the screen
Press [DIRECT NAVIGATOR].

Playing DivX, MP3 and still pictures (JPEG)

Useful functions during still picture play

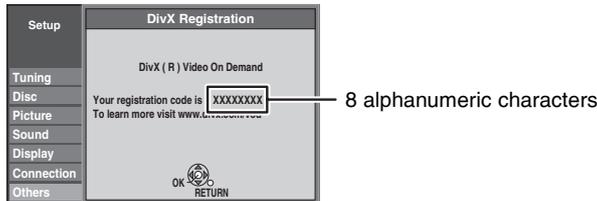|	
Start Slide Show Slide Show Setting	You can display still pictures one by one at a constant interval. **While the Album View screen is displayed** **1 Press [▲, ▼, ◄, ►] to select the album.** **2 Press [►] (PLAY).** **You can also start Slide Show with the following steps.** While the Album View screen is displayed ① Press [▲, ▼, ◄, ►] to select the desired album and press [OPTION]. ② Press [▲, ▼] to select "Start Slide Show" and press [OK]. • **To change the display interval** 1 Press [▲, ▼] to select "Slide Show Setting" in step ② and press [OK]. 2 Press [▲, ▼] to select "Display interval". 3 Press [◄, ►] to select the desired interval (0-30 seconds) and press [OK]. • **Repeat Play** 1 Press [▲, ▼] to select "Slide Show Setting" in step ② and press [OK]. 2 Press [▲, ▼] to select "Repeat Play". 3 Press [◄, ►] to select "On" or "Off" and press [OK].
Rotate	**While playing** **1 Press [OPTION].** **2 Press [▲, ▼] to select "Rotate RIGHT" or "Rotate LEFT" and press [OK].** • **Rotation information will not be stored.**
Zoom in Zoom out	**While playing** **1 Press [OPTION].** **2 Press [▲, ▼] to select "Zoom in" and press [OK].** • To return the picture to its original size, press [▲, ▼] to select "Zoom out" in step 2 and press [OK]. • When zooming in, the picture may be cut off. • The enlargement information will not be stored. • The "Zoom in/Zoom out" function is only available for still pictures smaller than 640 × 480 pixels.
Properties	**While playing** **Press [STATUS] twice.** **To exit the picture properties screen** Press [STATUS].

Regarding DivX VOD content

DivX Video-on-Demand (VOD) content is encrypted for copyright protection. In order to play DivX VOD content on this unit, you first need to register the unit.
Follow the on line instructions for purchasing DivX VOD content to enter the unit's registration code and register the unit. For more information about DivX VOD, visit www.divx.com/vod.

Display the unit's registration code.
(➔ 40, "DivX Registration" in "Others" tab)

Setup	DivX Registration
Tuning	
Disc	DivX (R) Video On Demand
Picture	Your registration code is XXXXXXXX
Sound	To learn more visit www.divx.com/vod
Display	
Connection	OK
Others	RETURN

→ 8 alphanumeric characters

- After playing DivX VOD content for the first time, new registration code is then displayed in "DivX Registration". Do not use this registration code to purchase or rent DivX VOD content. If you use this code to purchase (rent) DivX VOD content, and then play the content on this unit, you will no longer be able to play any content that you purchased (rented) using the old code.
- If you purchase or rent DivX VOD content using a registration code different from this unit's code, you will not be able to play that content. ("Authorisation Error." is displayed.)

Regarding DivX content that can only be played a set number of times

Some DivX VOD content can only be played a set number of times. When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. ("Rental Expired." is displayed.)

When playing this content
- The number of remaining plays is reduced by one if:
  – you press [⏻ DVD].
  – you press [■] (STOP).
  – you press [DIRECT NAVIGATOR].
  – you press [◄◄] (SKIP) or [◄◄, ►►] (SEARCH) etc. and arrive at another content or the start of the content being played.
- Resume play function (➔ 21) does not work.

Regarding MP3, DivX and still pictures

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (titles or tracks) and/or folders (groups) and some files (tracks) may not display or be playable.
- English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.

MP3

Playable discs	CD-R/RW
File format	MP3 • Files must have the extension ".mp3" or ".MP3".
Maximum number of folders (groups)	300 (including the root folder)
Maximum number of files (tracks)	3000[※1]
Bit rates	32 kbps to 320 kbps
Sampling frequency	16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz
ID3 tags	Not compatible

- If there is a large amount of still picture data etc. within an MP3 file, play may not be possible.

DivX

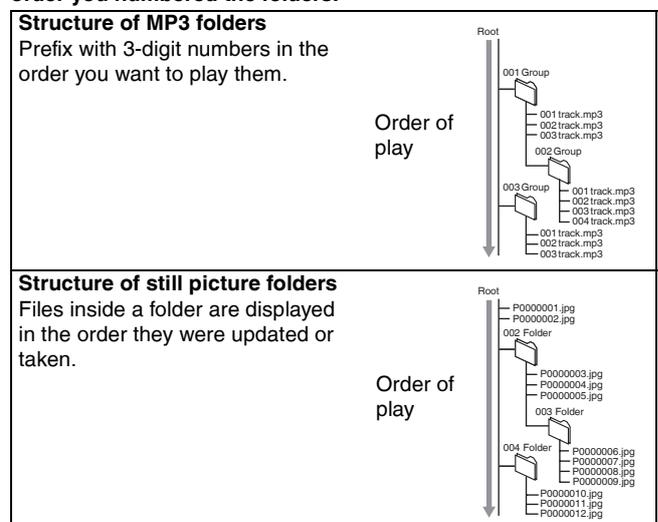| Playable discs	DVD-R, DVD-R DL, CD-R/RW
File format	DivX • Files must have the extension ".DIVX", ".divx", ".AVI" or ".avi".
Maximum number of folders	300 (including the root folder)
Maximum number of files	200[※1]
Support version	Plays all versions of DivX video (including DivX 6) with standard playback of DivX media files. Certified to the DivX Home Theater Profile. Video – Number of stream: Up to 1 – Codec: DIV3, DIV4, DIVX, DV50 – Picture size: 32 x 32 to 720 x 576 – FPS (Frame Per Second): Up to 30 fps Audio – Number of stream: Up to 8 – Format: MP3, Dolby Digital, MPEG – Multi channel: Dolby Digital is possible. MPEG multi is 2ch conversion. • GMC (Global Motion Compensation) is not supported.

Still pictures (JPEG[※2])

Playable discs	CD-R/RW
File format	JPEG • Files must have the extension ".jpg" or ".JPG".
Number of pixels	34 x 34 to 6144 x 4096 (Sub sampling is 4:2:2 or 4:2:0)
Maximum number of folders	300 (including the root folder)
Maximum number of files	3000[※1]
MOTION JPEG Progressive JPEG	Not compatible

※1 Total number of recognizable file including MP3, JPEG, DivX and other type of files is 4000.
※2 It may take a few moments for still pictures to display.

You can play MP3 and still pictures (JPEG) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.

Structure of MP3 folders
Prefix with 3-digit numbers in the order you want to play them.

Order of play

Root
001 Group
 001 track.mp3
 002 track.mp3
 003 track.mp3
002 Group
003 Group
 001 track.mp3
 002 track.mp3
 003 track.mp3
 004 track.mp3
 001 track.mp3
 002 track.mp3
 003 track.mp3

Structure of still picture folders
Files inside a folder are displayed in the order they were updated or taken.

Order of play

Root
P0000001.jpg
P0000002.jpg
002 Folder
 P0000003.jpg
 P0000004.jpg
 P0000005.jpg
003 Folder
004 Folder
 P0000006.jpg
 P0000007.jpg
 P0000008.jpg
 P0000009.jpg
 P0000010.jpg
 P0000011.jpg
 P0000012.jpg

- When the highest level folders are "DCIM" folders, they are displayed first on the tree.

DVD

```
DVD
  ⏻        TV
           ⏻   CH      +
                       VOL
           AV  CH

  1    2    3    CH
  4    5    6
  7    8    9    INPUT SELECT
  DELETE
   *   0   -/--
      ── SKIP ──  SLOW/SEARCH
  |◄◄  ►►|   ◄◄   ►►
  STOP   PAUSE   PLAY/ x1.3
   ■      ||      ►
  TIME SLIP           EXIT
   ○                    ○
       PROG/CHECK
              ▲
          OK
  ◄           ►
              ▼
  OPTION            RETURN
   ○                  ○
            CREATE
  AUDIO DISPLAY CHAPTER MANUAL SKIP

  REC  REC MODE  F Rec  STATUS
   ●
```

▲, ▼, ◄, ►
OK

DISPLAY

STATUS
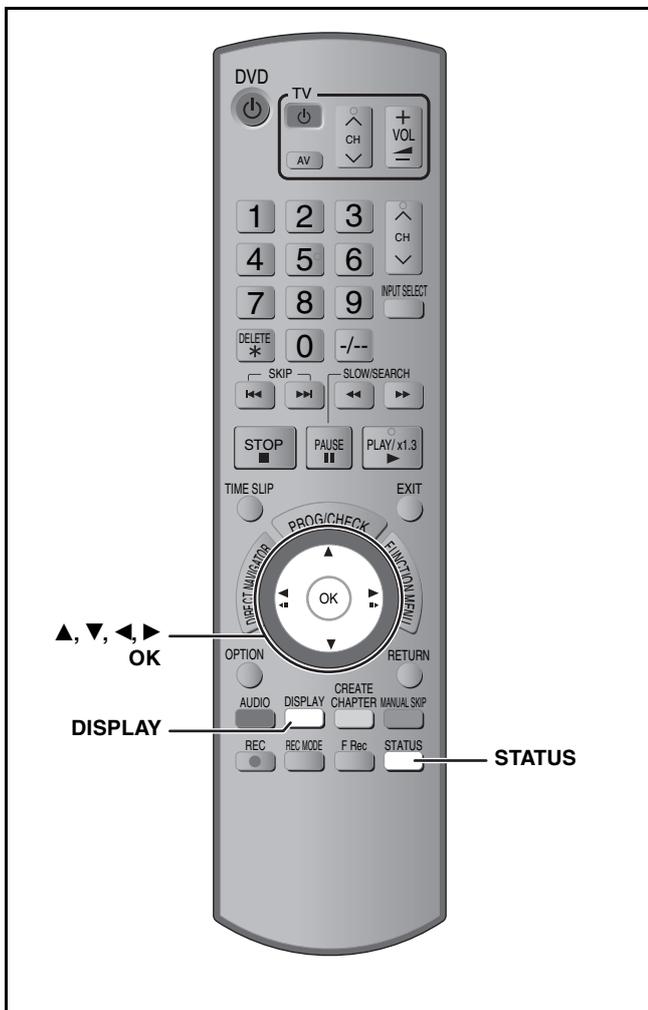
Using on-screen menus

Common procedures

1 Press **[DISPLAY]**.

Disc	Soundtrack	1	⎕⎕ Digital 2/0 ch
Play	Subtitle		Off
Picture	Audio channel		L R
Sound			
Other			

Menu   Item   Setting

- Depending on the condition of the unit (playing, stopped, etc.) and disc contents, there are some items that you cannot select or change.

2 Press **[▲, ▼]** to select the menu and press **[►]**.

3 Press **[▲, ▼]** to select the item and press **[►]**.

4 Press **[▲, ▼]** to select the setting.
- Some items can be changed by pressing [OK].

To clear the on-screen menus
Press [DISPLAY].

Disc menu–Setting the disc content

Soundtrack※ `DVD-V`

Select the audio and language (➔ below, Audio attribute, Language).
`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `-RW(VR)`
The disc's audio attributes appear.
DivX
Select the soundtrack number.
- Soundtrack numbers are displayed even when there is only one audio type.

Subtitle※ `DVD-V`

Turn the subtitle on/off and select the language (➔ below, Language).
`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `-RW(VR)`
(Only discs that contain subtitle on/off information)
Turn the subtitle on/off.
- Subtitle on/off information cannot be recorded using this unit.
DivX
Turn the subtitle on/off and select the subtitle number.
- Subtitle numbers are displayed even if there are not multiple subtitles.

Audio channel `RAM` `-RW(VR)` `VCD` and DivX

➔ 20, Changing audio during play

Source Select (DivX)

- **Automatic:**
  The constructing method of the DivX contents is automatically distinguished and output.
- **Interlace:**
  Select when the disc contents were recorded using interlace.
- **Progressive:**
  Select when the disc contents were recorded using progressive.

Angle※ `DVD-V`

Change the number to select an angle.

PBC (Playback control ➔ 50) `VCD`

Indicates whether menu play (playback control) is on or off. (unchangeable)

※ With some discs, you may only be able to make changes using the menus (➔ 20) on the disc.
- The display changes according to the disc content. You cannot change when there is no recording.

Audio attribute
LPCM/⎕⎕Digital/DTS/MPEG:	Signal type
ch (channel):	Number of channels
k (kHz):	Sampling frequency
b (bit):	Number of bits

Language
ENG:	English	DAN:	Danish	THA:	Thai
FRA:	French	POR:	Portuguese	POL:	Polish
DEU:	German	RUS:	Russian	CES:	Czech
ITA:	Italian	JPN:	Japanese	SLK:	Slovak
ESP:	Spanish	CHI:	Chinese	HUN:	Hungarian
NLD:	Dutch	KOR:	Korean	FIN:	Finnish
SVE:	Swedish	MAL:	Malay	✳:	Others
NOR:	Norwegian	VIE:	Vietnamese		

Play menu–Change the play sequence

This function works only when the elapsed play time is displayed. Select the item for repeat play. Depending on the disc, the items that can be selected will differ.

Repeat Play

- All   `CD` `VCD`
- Chapter   `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `DVD-V` `-RW(VR)`
- Group   MP3
- PL (Playlist) `RAM` `-RW(VR)`
- Title   `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `DVD-V` `-RW(VR)`
- Track   `CD` `VCD` and MP3
Select "Off" to cancel.

Picture menu–Change the picture quality

Playback NR

Reduces noise and picture degradation.

Progressive※ **(➔ 50)**

Select "On" to enable progressive output.
Select "Off" if the picture is stretched horizontally.

Transfer※ [When "Progressive" (➔ above) is set to "On"]

Select the method of conversion for progressive output to suit the type of title being played (➔ 50, Film and video).

When the output signal is PAL
• **Auto:**   Automatically detects the film and video content, and appropriately converts it.
• **Video:**   Select when using "Auto", and the content is distorted.
• **Film:**   Select this if the edges of the film content appear jagged or rough when "Auto" is selected. However, if the video content is distorted as shown in the illustration to the right, then select "Auto".
• When the tray is opened, the setting will return to "Auto".

When the output signal is NTSC
• **Auto 1** (normal)**:**
                Automatically detects the film and video content, and appropriately converts it.
• **Auto 2:**   In addition to "Auto 1", automatically detects film contents with different frame rates and appropriately converts it.
• **Video:**   Select when using "Auto 1" and "Auto 2", and the content is distorted.

Input NR (Only when AV1, AV2, AV3, AV4 or DV is selected)

Reduces video tape noise while copying.
• **Automatic:** Noise reduction only works on picture input from a video tape.
• **On:**   Noise reduction works for any input video.
• **Off:**   Noise reduction is off. You can record the input signal as it is.

※ Only when you have set "Progressive" to "On" in the Setup menu (➔ 39).

Sound menu–Change the sound effect

V.S.S.

RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR)
(Dolby Digital, MPEG, 2-channel or over only)

Enjoy a surround-like effect if you are using two front speakers only.
• Turn V.S.S. off if it causes distortion. (Check the surround function on the connected equipment.)
• V.S.S. does not work for bilingual recordings.

Dialogue Enhancer

RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) and DivX
(Dolby Digital, 3-channel or over only, including a centre channel)

The volume of the centre channel is raised to make dialogue easier to hear.
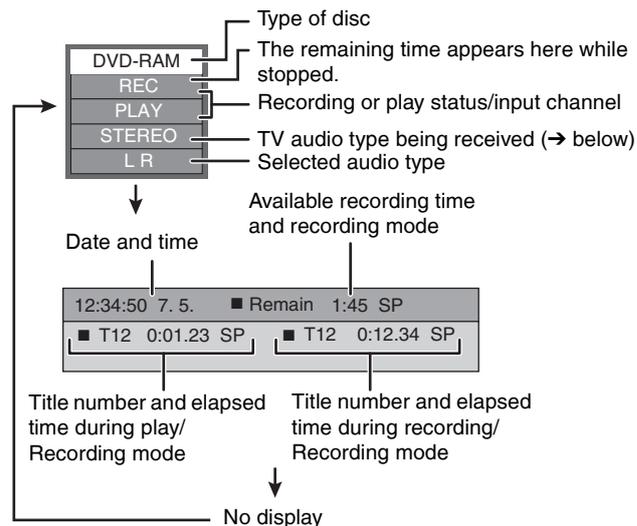
Other menu–Change the display position

Position
1 - 5: The higher the setting the lower the on-screen menu moves.

Status message

Status messages appear on the television during operation to show the condition of the unit.

Press [STATUS].

The display changes each time you press the button.

Type of disc
The remaining time appears here while stopped.
Recording or play status/input channel
TV audio type being received (➔ below)
Selected audio type

```
DVD-RAM
  REC
  PLAY
  STEREO
  L R
```

Available recording time and recording mode

Date and time

```
12:34:50  7. 5.    ■ Remain   1:45  SP
■ T12   0:01.23  SP      ■ T12    0:12.34  SP
```

Title number and elapsed time during play/ Recording mode   Title number and elapsed time during recording/ Recording mode

No display

• **TV audio type**
  STEREO: Stereo broadcast
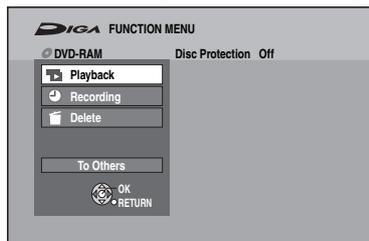 **M 1/M 2:** Bilingual dual-sound broadcast
  M 1:   Monaural broadcast

FUNCTION MENU window

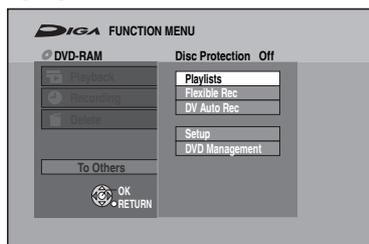By using the FUNCTION MENU window you may access the main functions quickly and easily.

1 Press [FUNCTION MENU].

Functions displayed depend on the type of disc.

DIGA FUNCTION MENU
DVD-RAM   Disc Protection   Off
Playback
Recording
Delete

To Others

OK
RETURN

2 Press [▲, ▼] to select an item and press [OK].

• If you select "To Others" and press [OK], the following screen appears. Press [▲, ▼] to select an item and press [OK].

DIGA FUNCTION MENU
DVD-RAM   Disc Protection   Off
Playback   Playlists
Recording   Flexible Rec
Delete   DV Auto Rec

                        Setup
                        DVD Management
To Others
OK
RETURN

• If you press [RETURN], you can return to the previous screen.

Playback	You can select and play recorded programmes (→ 20), change the Play Mode (DivX, JPEG, MP3) (→ 22), etc.
Recording	You can start programming timer recording (→ 18).
Delete	You can delete items using DELETE Navigator (→ 29).
Playlists	You can create playlists by grouping your favourite chapters (→ 32).
Flexible Rec	The unit sets the best possible picture quality that fits the recording within the remaining disc space (→ 17).
DV Auto Rec	DV automatic recording function (→ 34)
Setup	You can change the unit's settings using Setup menu (→ 37).
DVD Management	You can manage the discs through formatting, finalising and other operations (→ 35).

To exit the FUNCTION MENU window
Press [FUNCTION MENU].

Entering text

RAM -R -R DL -RW(V) +R +R DL +RW
You can give names to recorded titles, etc.
The maximum number of characters:

RAM	Characters	-R -R DL -RW(V) +R +R DL +RW	Characters
Title	64 (44※)	Title	44
Playlist	64	Disc	40
Disc	64		

※ Title name for timer recording
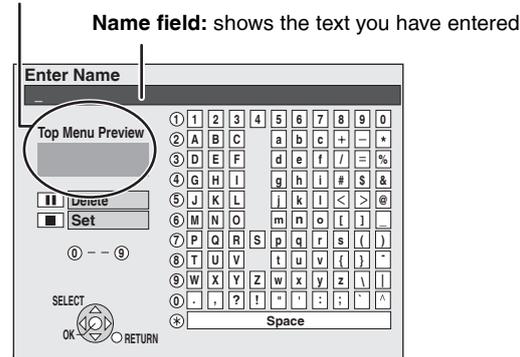
If a name is long, parts of it may not be shown in some screens.

1 Show Enter Name screen.

Title (timer recording)	(→ 18, step 3)
Title	(→ 30, step 3)
Playlist	(→ 33, step 5)
Disc	(→ 35, "Providing a name for a disc")

-R -R DL -RW(V) +R +R DL +RW
If you enter a long name, only part of it is shown in the Top Menu after finalisation (→ 36). When entering a title name, the name that will appear in the Top Menu can be previewed in "Top Menu Preview" window.

Name field: shows the text you have entered

Enter Name

Top Menu Preview

Delete
Set
0 – – 9

SELECT
OK   RETURN

① 1 2 3 4 5 6 7 8 9 0
② A B C   a b c + – *
③ D E F   d e f / = %
④ G H I   g h i # $ &
⑤ J K L   j k l < > @
⑥ M N O   m n o [ ] _
⑦ P Q R S p q r s ( )
⑧ T U V   t u v { } `
⑨ W X Y Z w x y z \ |
⑩ . , ? ! " : ; ' ^
⑩ Space

2 Press [▲, ▼, ◄, ►] to select a character and press [OK].

Repeat this step to enter other characters.
• **To delete a character**
  Press [▲, ▼, ◄, ►] to select the character in the name field and press [❙❙].
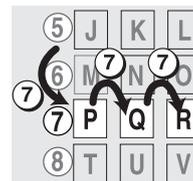• **Using the numbered buttons to enter characters**
  e.g., entering the letter "R"
  ① **Press [7] to move to the 7th row.**
  ② **Press [7] twice to highlight "R".**
  ③ **Press [OK].**
• **To enter a space**
  Press [DELETE ✳] and press [OK].

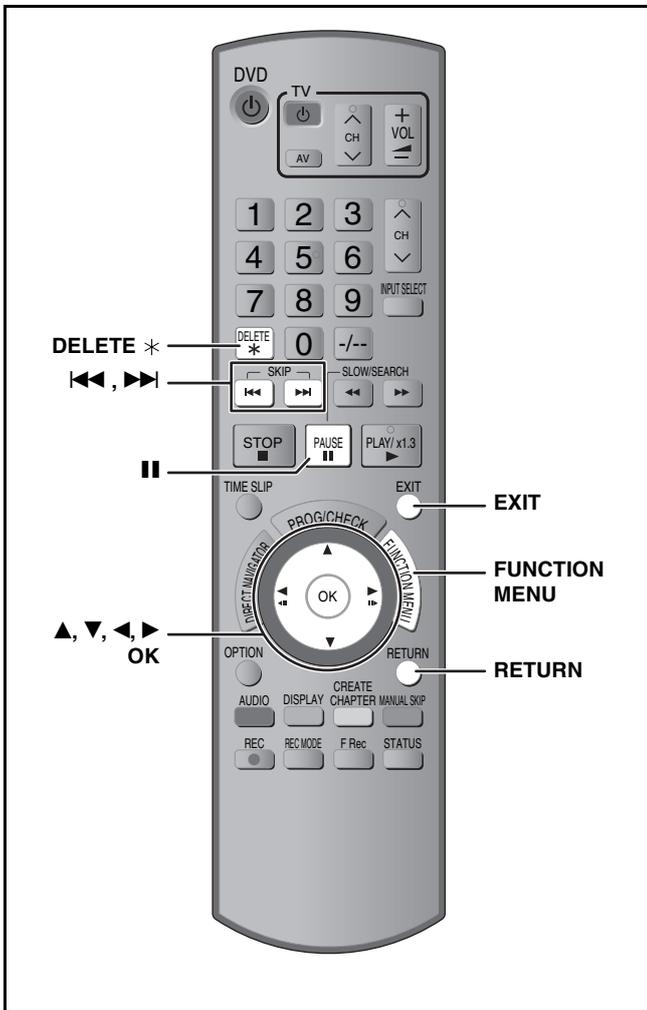⑤ J K L
⑥ M N O
7 ⑦ P Q R
⑧ T U V

3 Press [■] (Set).

"Writing..." appears then the screen returns to the Title View screen and so on.

To end partway
Press [RETURN].
Text is not saved.

Deleting titles

`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`
(You cannot delete titles on finalised discs.)
- **A title cannot be restored once it is deleted.**
 Make certain before proceeding.
- You cannot delete while recording or copying.

- **`RAM`**
 When a recorded title is deleted the available disc space will
 increase by the amount deleted.

 The available disc space increases if any
 of these is deleted.

Title1	Title2	- - - -	The last recorded title	The available space

- **`-RW(V)` `+RW`**
 Disc space increases only when the last recorded title is deleted.

 The available space does not
 increase if these are deleted.   When deleted, the available
                                        disc space increases.

Title1	Title2	- - - -	The last recorded title	The available space

- **`-R` `-R DL` `+R` `+R DL`**
 Available space does not increase after deletion.

Using the DELETE Navigator to delete

Preparation
- Turn on the television and select the appropriate AV input to suit
 the connections to this unit.
- Turn the unit on.
- Insert the disc (→ 16).
- **`RAM`** Release protection (→ 35, Setting the protection).

1 **While stopped**

 # Press [FUNCTION MENU].

2 # Press [▲, ▼] to select "Delete" and press [OK].
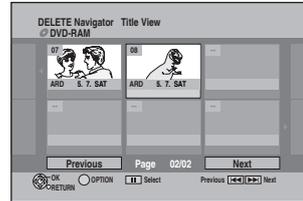
3 # Press [▲, ▼, ◄, ►] to select the title and press [OK].

 You can confirm the titles that you have selected using the
 option menu.
 - Refer to option menu operations for the "Title View" (→ 30,
  step 3).

 To show other pages
 Press [|◄◄] (Previous) or [►►|] (Next).
 Multiple deleting
 Select with [▲, ▼, ◄, ►] and press [❙❙]. (Repeat.)
 - A check mark appears. Press [❙❙] again to cancel.

4 # Press [◄, ►] to select "Delete" and press [OK].
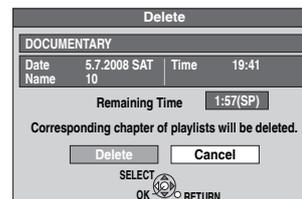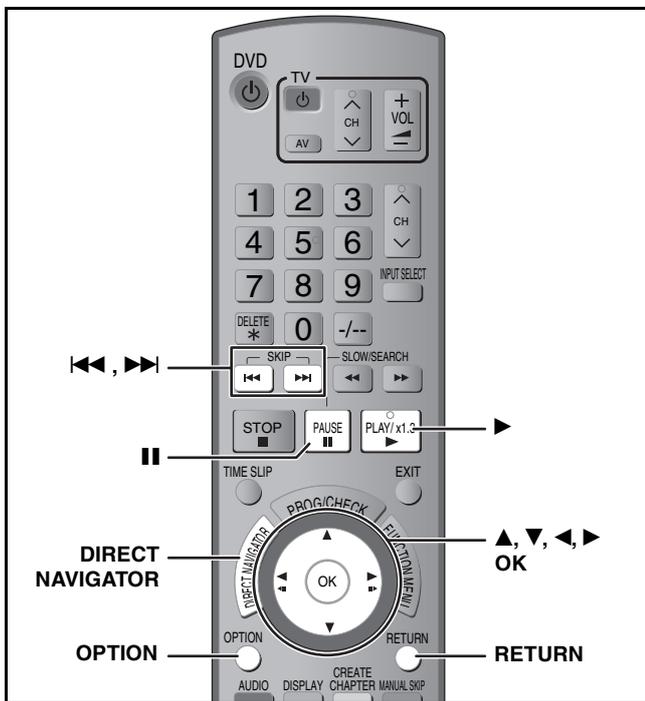 The title is deleted.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [EXIT].

Deleting titles during play

1 **While playing**

 # Press [DELETE ✳].

2 # Press [◄, ►] to select "Delete" and press [OK].
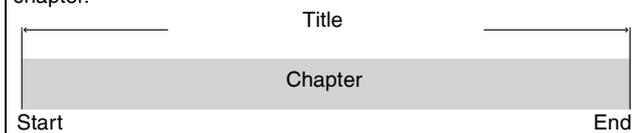 The title is deleted.

[RAM]
[-R] [-R DL] [-RW(V)] [+R] [+R DL] (You cannot edit finalised discs.)
[+RW] [-RW(VR)]

Title/Chapter
Programmes are recorded as a single title consisting of one chapter.

Title
Chapter
Start — End

⬇

[RAM] You can divide a title into multiple chapters.
(→ 21, 31, "Create Chapter")

Title
| Chapter | Chapter | Chapter | Chapter |

⬇

[RAM] You can change the order of chapters and create a playlist
(→ 32).

• [-R] [-R DL] [-RW(V)] [+R] [+R DL] Titles are divided into about 5-minute ([+R] [+R DL] 8-minute) chapters after finalising (→ 36).

• The maximum number of items on a disc:

 –Titles: 99 ([+R] [+R DL] [+RW] 49 titles)
 –Chapters: Approximately 1000
 ([+R] [+R DL] [+RW] Approximately 254)
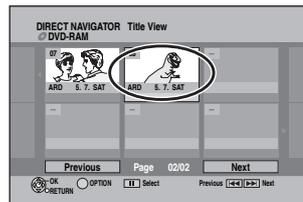 (Depends on the state of recording.)

Note
• Once deleted or partially deleted, title/chapters cannot be restored to their original state. Make certain before proceeding.
• You cannot edit during recording or copying, etc.
• Restricted recording information remains even after editing (e.g. dividing a title etc).
• [+RW] You can create a Top Menu using "Create Top Menu" (→ 36). Recording or editing on the disc may delete the menu. In that case, create the menu again.
• [+R] [+R DL] Management information is recorded in unused sections when you edit discs. The available space on these discs decreases each time you edit their contents.

Preparation
• Turn on the television and select the appropriate AV input to suit the connections to this unit.
• Turn the unit on.
• Insert the disc with the title to edit (→ 16).
• [RAM] Release protection (→ 35, Setting the protection).

Editing titles/chapters and playing chapters

1 During play or while stopped
Press [DIRECT NAVIGATOR].

2 **Press [▲, ▼, ◄, ►] to select the title.**

DIRECT NAVIGATOR Title View
⊘ DVD-RAM
ARD 5. 7. SAT   ARD 5. 7. SAT
Previous   Page 02/02   Next
OK/RETURN   OPTION   Select   Previous ◄◄ ►► Next

To show other pages
Press [▲, ▼, ◄, ►] to select "Previous" or "Next" and press [OK].
• You can also press [◄◄, ►►] to show other pages.
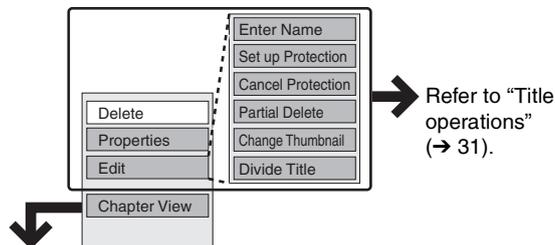**Multiple editing**
Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
• A check mark appears. Press [❚❚] again to cancel.

3 **Press [OPTION], then press [▲, ▼] to select the operation and press [OK].**
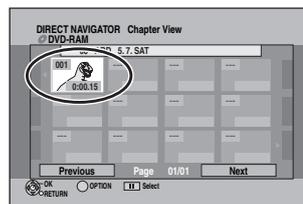• If you select "Edit", press [▲, ▼] to select the operation and press [OK].

	Enter Name
	Set up Protection
	Cancel Protection
Delete	Partial Delete	→ Refer to "Title operations" (→ 31).
Properties	Change Thumbnail
Edit	Divide Title
Chapter View	

If you select "Chapter View" (→ step 4)

4 **Press [▲, ▼, ◄, ►] to select the chapter.**
To start play → Press [OK].
To edit → Step 5.

DIRECT NAVIGATOR Chapter View
⊘ DVD-RAM
ARD 5. 7. SAT
001 0:00.15
Previous   Page 01/01   Next
OK/RETURN   OPTION   Select

• To show other pages/Multiple editing (→ above)

5 **Press [OPTION], then press [▲, ▼] to select the operation and press [OK].**

| Delete Chapter |
| Create Chapter |
| Combine Chapters | → Refer to "Chapter operations" (→ 31).
| Title View |
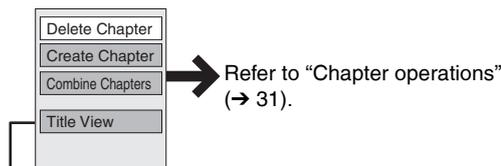
• You can go back to the Title View.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [DIRECT NAVIGATOR].

Title operations

After performing steps 1–3 (→ 30)

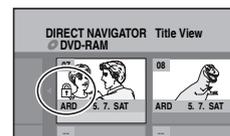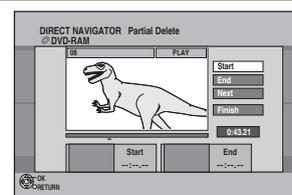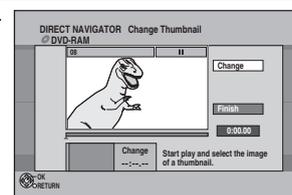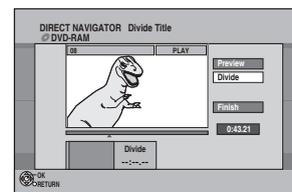|	

Delete※
 	
`RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
	Press [◄, ►] to select "Delete" and press [OK].
	• **Once deleted, the recorded contents are lost and cannot be restored.**
	Make certain before proceeding.
	• `-R` `-R DL` `+R` `+R DL` The available recording time on a disc does not increase when you delete titles.
	• `-RW(V)` `+RW` Available recording space on a disc increases only when the last recorded title is deleted. It does not increase if other titles are deleted (→ 29).

Properties
 	
`RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW` `-RW(VR)`
	Information (e.g., time and date) is shown.
	• Press [OK] to exit the screen.
	
	Properties
	Dinosaur
	No. 01 / Time 12:19
	Date 5.7.2008 SAT / Rec time 0:30 (SP)
	Name 4
	OK / RETURN

Enter Name
 	
`RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
	You can give names to recorded titles.
	→ 28, Entering text

Set up Protection※ Cancel Protection※ `RAM` `+R` `+R DL` `+RW`	If set, this will protect the title from accidental deletion. **Press [◄, ►] to select "Yes" and press [OK].** The lock symbol appears when the title is protected. DIRECT NAVIGATOR Title View DVD-RAM ARD 5.7. SAT / 08 ARD 5.7. SAT
Partial Delete `RAM` (→ below, "For your reference")	You can remove unnecessary part of the recording. ① **Press [OK] at the start point and end point of the section you want to delete.** ② **Press [▲, ▼] to select "Finish" and press [OK].** • Select "Next" and press [OK] to delete other sections. ③ **Press [◄, ►] to select "Delete" and press [OK].** DIRECT NAVIGATOR Partial Delete DVD-RAM 08 PLAY Start / End / Next / Finish / 0:43.21 Start --:--.-- End --:--.-- OK / RETURN

Change Thumbnail
 	
`RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
(→ below, "For your reference")
	You can change the image to be shown as a thumbnail picture in the Title View.
	① **Press [►] (PLAY) to start play.**
	② **Press [OK] when the image you want to use as a thumbnail is shown.**
	To change the thumbnail
	Restart play and press [▲, ▼] to select "Change", then press [OK] at the point you want to use as the thumbnail.
	③ **Press [▲, ▼] to select "Finish" and press [OK].**
	
	DIRECT NAVIGATOR Change Thumbnail
	DVD-RAM
	08
	Change / Finish / 0:00.00
	Change --:--.-- Start play and select the image of a thumbnail.
	OK / RETURN

Divide Title `RAM` (→ below, "For your reference")	You can divide a title into two. ① **Press [OK] at the point you want to divide the title.** ② **Press [▲, ▼] to select "Finish" and press [OK].** ③ **Press [◄, ►] to select "Divide" and press [OK].** **To confirm the division point** Press [▲, ▼] to select "Preview" and press [OK]. (The unit plays 10 seconds before and after the division point.) **To change the division point** Restart play and press [▲, ▼] to select "Divide", then press [OK] at the point you want to divide the title. DIRECT NAVIGATOR Divide Title DVD-RAM 08 PLAY Preview / Divide / Finish / 0:43.21 Divide --:--.-- OK / RETURN **Note** • The divided titles retain the name and CPRM property (→ 50) of the original title. • Video and audio just before and after the dividing point may momentarily be cut out. Carry out the title division after checking it with "Preview" (→ above).

※ Multiple editing is possible.

Chapter operations

After performing steps 1–5 (→ 30)

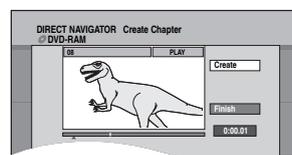|	
Delete Chapter※ `RAM`	**Press [◄, ►] to select "Delete" and press [OK].** • **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding. • Select "Combine Chapters" (→ below) when you only want to delete the division point between chapters. (The recorded contents will not be deleted.)
Create Chapter `RAM` (→ below, "For your reference")	Select the point where you want to start a new chapter while viewing the title. ① **Press [OK] at the point you want to divide.** • Repeat this step to divide at other points. ② **Press [▲, ▼] to select "Finish" and press [OK].** DIRECT NAVIGATOR Create Chapter DVD-RAM 08 PLAY Create / Finish / 0:00.01
Combine Chapters `RAM`	**Press [◄, ►] to select "Combine" and press [OK].** • The selected chapter and following chapter are combined.

※ Multiple editing is possible.

For your reference
• Use Search (→ 21) or Time Slip (→ 21) to find the desired point.
• To find the desired point correctly, use Slow-motion (→ 21) and Frame-by-frame (→ 21).
• To skip to the start or end of a title, press [|◄◄] (start) or [►►|] (end).
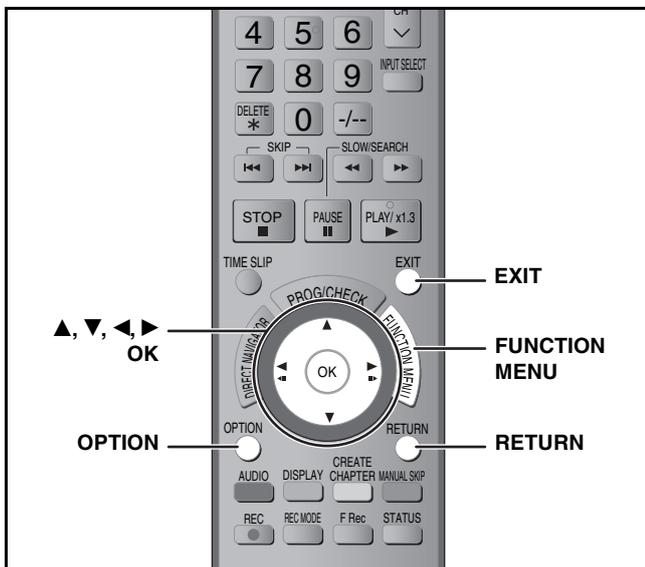
You can arrange the chapters (→ 30) to create a playlist.

Title			Title	
Chapter	Chapter	Chapter	Chapter	Chapter

Playlist	Chapter	Chapter
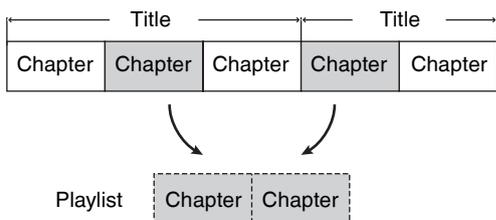
- Editing playlists doesn't modify the recorded data. Playlists are not recorded separately so this doesn't use much capacity.
- You cannot create or edit a playlist while recording or copying.

[RAM]
- The maximum number of items on a disc:
  - Playlists: 99
  - Chapters in playlists: Approximately 1000
    (Depends on the state of recording.)
- If you exceed the maximum numbers of items for a disc, all the items entered will not be recorded.

Preparation
- Turn on the television and select the appropriate AV input to suit the connections to this unit.
- Turn the unit on.
- Insert the disc with the title to edit (→ 16).
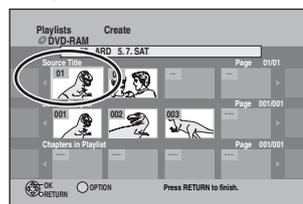- Release protection (→ 35, Setting the protection).

Creating playlists

1 While stopped
Press [FUNCTION MENU].

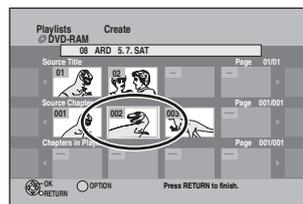**2** **Press [▲, ▼] to select "To Others" and press [OK].**
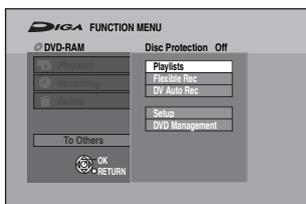
3 **Press [▲, ▼] to select "Playlists" and press [OK].**

4 **Press [▲, ▼, ◄, ►] to select "Create" and press [OK].**
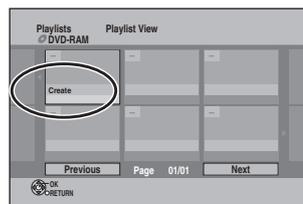
5 **Press [◄, ►] to select the source title and press [▼].**
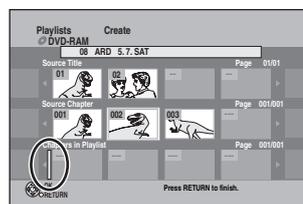- Press [OK] to select all the chapters in the title, then skip to step 7.

6 **Press [◄, ►] to select the chapter you want to add to a playlist and press [OK].**
- Press [▲] to cancel.

- You can also create a new chapter from the source title. Press [OPTION] to select "Create Chapter" and press [OK] (→ 31, Create Chapter).

7 **Press [◄, ►] to select the position to insert the chapter and press [OK].**

- Press [▲] to select other source titles.
- Repeat steps 6–7 to add other chapters.

8 **Press [RETURN].**
All the selected scenes become the playlist.
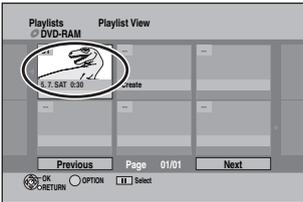
To return to the previous screen
Press [RETURN].

To exit the screen
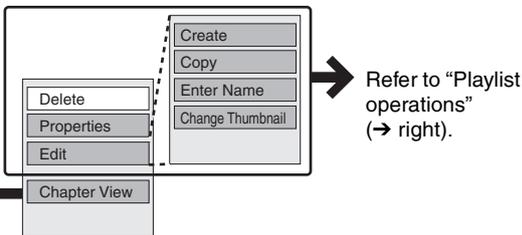Press [EXIT].

Editing and playing playlists/chapters

RAM
-RW(VR) (play only)

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "To Others" and press [OK].**

3 **Press [▲, ▼] to select "Playlists" and press [OK].**

4 **Press [▲, ▼, ◄, ►] to select the playlist.**
To start play → Press [OK].
To edit → Step 5.

Playlists   Playlist View
DVD-RAM

5. 7. SAT 0:30   Create

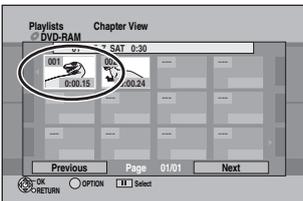Previous   Page 01/01   Next
OK RETURN   OPTION   Select

• To show other pages/Multiple editing (→ 30)

5 **Press [OPTION], then press [▲, ▼] to select the operation and press [OK].**
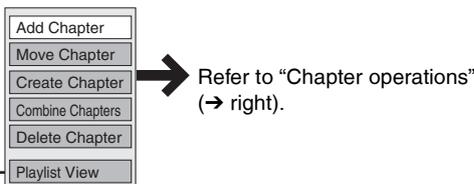• If you select "Edit", press [▲, ▼] to select the operation and press [OK].

```
                        Create
                        Copy
                        Enter Name    ──► Refer to "Playlist
Delete                  Change Thumbnail    operations"
Properties                                  (→ right).
Edit

Chapter View
```

If you select "Chapter View" (→ step 6)

6 **Press [▲, ▼, ◄, ►] to select the chapter.**
To start play → Press [OK].
To edit → Step 7.

Playlists   Chapter View
DVD-RAM
7. SAT 0:30
001   002
0:00.15   0:00.24

Previous   Page 01/01   Next
OK RETURN   OPTION   Select

• To show other pages/Multiple editing (→ 30)

**7** **Press [OPTION], then press [▲, ▼] to select the operation and press [OK].**

```
Add Chapter
Move Chapter
Create Chapter   ──► Refer to "Chapter operations"
Combine Chapters     (→ right).
Delete Chapter

Playlist View
```

• You can go back to the Playlist View.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [EXIT].

Playlist operations

After performing steps 1–5 (→ left)

|	
Delete※ RAM	**Press [◄, ►] to select "Delete" and press [OK].** **Once deleted, the playlists are lost and cannot be restored.** Make certain before proceeding.
Properties RAM -RW(VR)	Playlist information (e.g., total time and date) is shown. • Press [OK] to exit the screen. **Properties** Dinosaur No. 01 Date 5.7.2008 SAT Chapters 012 Total 0:30.05 OK RETURN
Create RAM	→ 32, Creating playlists, steps 5–8
Copy※ RAM	**Press [◄, ►] to select "Copy" and press [OK].** • The copied playlist becomes the newest one in the playlist view screen.
Enter Name RAM	→ 28, Entering text
Change Thumbnail RAM	→ 31, Change Thumbnail
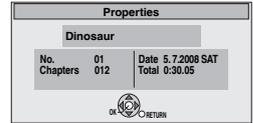
※ Multiple editing is possible.

Chapter operations

RAM

After performing steps 1–7 (→ left)
• Editing chapters in a playlist does not modify the source titles and source chapters.

|	
Add Chapter	→ 32, Creating playlists, steps 5–8
Move Chapter	**Press [▲, ▼, ◄, ►] to select the position to insert the chapter and press [OK].** Playlists Move Chapter DVD-RAM 01 5. 7. SAT 0:30 001 002 0:00.15 0:00.x Previous Page 01/01 Next OK RETURN
Create Chapter	→ 31, Create Chapter
Combine Chapters	→ 31, Combine Chapters
Delete Chapter※	→ 31, Delete Chapter The playlist itself is deleted if you delete all the chapters in it.
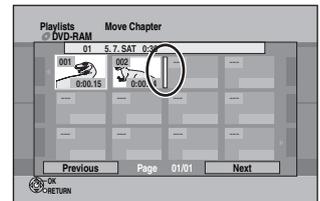
※ Multiple editing is possible.
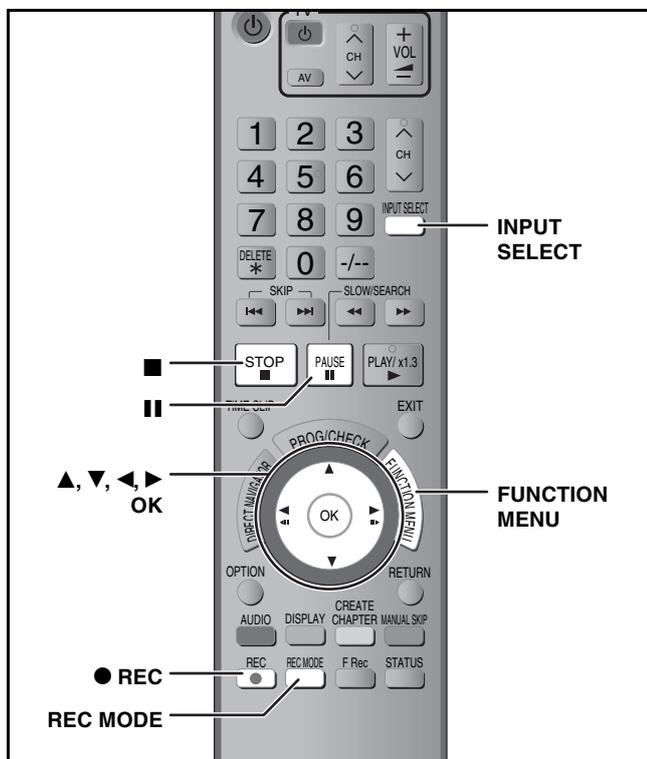
You can record from equipment connected to the AV3, AV4, or DV IN terminals on the unit.
- To connect to the AV4 terminals (➔ 11)
- To connect to the AV3 or DV IN terminals (➔ below)
- You can also connect to the AV2 input terminal on the rear.
- Turn off the unit and other video equipment before connecting.
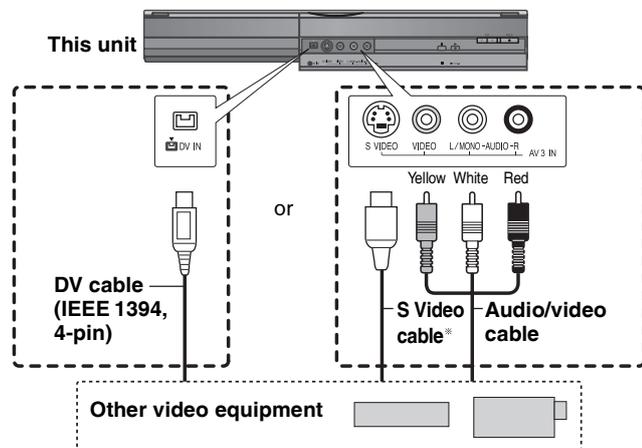
If the audio output of the other equipment is monaural
Connect to L/MONO on the AV3 input terminals at the front.
※ The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

Preparation
- Turn on the unit and connected equipment.
- Insert a disc (➔ 16).
- Press [REC MODE] to select the recording mode.
- When recording a bilingual programme (➔ 14).
- When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➔ 39). This unit cannot record to discs containing both PAL and NTSC signals.
- To reduce noise in input from external equipment, set "Input NR" to "On" (➔ 27).
- Check the time on the unit is correct.
- **When recording from the unit's DV IN terminal**
  Select the type of audio recording from "Audio Mode for DV Input" in the Setup menu (➔ 39).
  When recording from DV equipment (e.g., digital video camcorder), you can record audio/video recordings from DV tape only.
About the aspect when recording a programme (➔ 14)

Note
- If it becomes time for a timer recording to start while copying, the recording will start and the copying will stop.
- If video is copied from another piece of equipment to this unit, then the video quality will be degraded.

DV automatic recording (DV Auto Rec)

RAM -R -RW(V) +R +RW

RAM Programmes are recorded as a title while at the same time chapters are created at each break in the images and the playlist is created automatically.
When "DV Auto Rec" screen is displayed

Press [◄, ►] to select "Rec to DVD" and press [OK].
You can proceed to step 4.

1 While stopped
Press [FUNCTION MENU].
2 ## Press [▲, ▼] to select "To Others" and press [OK].
3 ## Press [▲, ▼] to select "DV Auto Rec" and press [OK].
4 ## Press [◄, ►] to select "Rec" and press [OK].
Recording starts.

When recording finishes
The confirmation screen appears. Press [OK] to finish DV automatic recording.

To stop recording
Press [■]. The confirmation screen appears. Press [OK].

Note
- Only one piece of DV equipment (e.g., digital video camcorder) can be connected to the unit via the DV IN terminal.
- It is not possible to operate the unit from the connected DV equipment.
- The DV IN terminal on this unit is for use with DV equipment only. (It cannot be connected to a computer, etc.)
- The DV equipment name may not be shown correctly.
- Depending on the DV equipment, the images or audio may not be input properly.
- The date and time information on the tape of the DV equipment will not be recorded.
- You cannot record and play simultaneously.

If the DV automatic recording function does not work properly, check the connections and DV equipment settings, and turn the unit off and back on.
If that does not work, follow the instructions for manual recording (➔ below).

Manual recording

RAM -R -R DL -RW(V) +R +R DL +RW

1 While stopped
Press [INPUT SELECT] to select the input channel for the equipment you have connected.
e.g., If you have connected to the AV3 input terminals, select "A3".

2 ## Start play on the other equipment.

3 When you want to start recording
Press [● REC].
Recording starts.

- Using Flexible Recording (➔ 17), you can record the content of a video cassette (approx. 1–8 hours) to a 4.7 GB disc with the best possible quality of recording without wasting disc space.
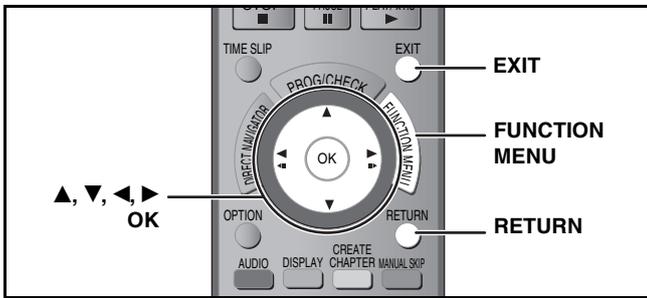**To skip unwanted parts**
Press [❙❙] to pause recording. (Press again to restart recording.)

To stop recording
Press [■].

Almost all videos and DVD-Video on sale have been treated to prevent illegal copying. Any software that has been so treated cannot be recorded using this unit.

DVD Management

EXIT
FUNCTION MENU
▲, ▼, ◄, ►
OK
RETURN

Common procedures

Preparation

• RAM Release protection (→ below).

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "To Others" and press [OK].**

3 **Press [▲, ▼] to select "DVD Management" and press [OK].**
Select which step 4 to perform depending on what you want to do next.

To return to the previous screen
Press [RETURN].
To exit the screen
Press [EXIT].

Providing a name for a disc

RAM -R -R DL -RW(V) +R +R DL +RW

After performing steps 1–3 (→ above)

4 **Press [▲, ▼] to select "Disc Name" and press [OK].**
→ 28, Entering text
• The disc name is displayed in the DVD Management window.
• -R -R DL -RW(V) +R +R DL With a finalised disc, the name is displayed on the Top Menu.
• +RW The disc name is displayed only if you play the disc on other equipment after creating top menu.

Setting the protection

RAM

After performing steps 1–3 (→ above)

4 **Press [▲, ▼] to select "Disc Protection" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

The lock symbol appears closed when the disc is write-protected.

Cartridge–protection

RAM (with a cartridge)

With the write-protect tab in the protect position, play automatically starts when inserted in the unit.

Deleting all titles and playlists –Delete all titles

RAM

After performing steps 1–3 (→ left)

4 **Press [▲, ▼] to select "Delete all titles" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

6 **Press [◄, ►] to select "Start" and press [OK].**
A message appears when finished.

7 **Press [OK].**

Note
• **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
• Deleting all video titles will result in all playlists also being deleted.
• Delete does not work if one or more titles are protected.

Deleting all the contents of a disc –Format Disc

RAM -RW(V) +RW -RW(VR)
+R +R DL (New disc only)

Note

Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding. The contents are deleted when you format a disc even if you have set protection.

After performing steps 1–3 (→ left)

4 **Press [▲, ▼] to select "Format Disc" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

6 **Press [◄, ►] to select "Start" and press [OK].**
A message appears when formatting is finished.
Note
• **Do not disconnect the AC mains lead while formatting.** This can render the disc unusable.
• Formatting normally takes a few minutes, however it may take up to a maximum of 70 minutes (RAM).

7 **Press [OK].**

Note
• -R -R DL CD Formatting cannot be performed on the disc.
• -RW(V) -RW(VR) You can format only as DVD-Video format on this unit.
• When a disc has been formatted using this unit, it may not be possible to use it on any other equipment.

RAM **To stop formatting**
Press [RETURN].
• You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.

Selecting whether to show the Top Menu first –Auto-Play Select

`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

You can select whether to show the top menu after finalising. Make selections before finalising the disc.

After performing steps 1–3 (→ 35)

4 **Press [▲, ▼] to select "Auto-Play Select" and press [OK].**

5 **Press [▲, ▼] to select "Top Menu" or "Title 1" and press [OK].**

Top Menu: The top menu appears first.
Title 1: The disc content is played without displaying the top menu.

Enabling discs to be played on other equipment –Finalise

`-R` `-R DL` `-RW(V)` `+R` `+R DL`

Finalise the disc so you can play it on other DVD equipment. The equipment must be able to play finalised discs. To check compatibility with other equipment, refer to page 6.
Make selections from "Auto-Play Select" (→ above) before finalising the disc.

After performing steps 1–3 (→ 35)

4 **Press [▲, ▼] to select "Finalise" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

6 **Press [◄, ►] to select "Start" and press [OK].**

• Finalising starts. You cannot cancel finalising.
• Finalising can take a few minutes, up to a maximum of 15 minutes, depending on the remaining space on the disc. (`-R DL` `+R DL` up to 60 minutes.)

| Note |
Do not disconnect the AC mains lead while finalising. This will render the disc unusable.

7 **Press [OK].**

After finalising
• `-R` `-R DL` `+R` `+R DL` The disc becomes play-only and you can no longer record or edit.
• `-RW(V)` **You can record and edit the disc after formatting (→ 35) although it becomes play-only after finalising.**
• Titles are divided into about 5-minute (`+R` `+R DL` 8-minute) chapters after finalising. This time varies greatly depending on the condition and mode of recording.
• There is a pause of several seconds between titles and chapters during play.

• You cannot finalise discs recorded on other manufacturer's equipment.
• Discs finalised on this unit may not be playable on other players due to the condition of the recording.
• When finalising a high-speed recording compatible disc, it may take longer than displayed on the confirmation screen (approximately four times).

Creating Top Menu –Create Top Menu

`+RW`

+RW discs contain no Top Menu data. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.
You cannot use Top Menu for playing on this unit.
Make selections from "Auto-Play Select" (→ left) before creating top menu.

After performing steps 1–3 (→ 35)

4 **Press [▲, ▼] to select "Create Top Menu" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

6 **Press [◄, ►] to select "Start" and press [OK].**

Creating Top Menu starts. You cannot cancel creating.
Creating Top Menu can take a few minutes.

7 **Press [OK].**

Recording or editing on the disc may delete the menu. In that case, create the menu again.

Enabling the second layer on DL (dual- or double- layer on single side) discs to be recordable –Close First Layer

`-R DL` `+R DL`

DVD-R DL and +R DL discs have two layers of recording surface on one side. This unit does not offer seamless recording on two layers. Recording stops when space on the first layer becomes full. You must close the first layer to start recording on the second layer. Closing makes the first layer unavailable for recording (editing is still available). You cannot cancel closing. Make certain before proceeding.

After performing steps 1–3 (→ 35)

4 **Press [▲, ▼] to select "Close First Layer" and press [OK].**

5 **Press [◄, ►] to select "Yes" and press [OK].**

6 **Press [◄, ►] to select "Start" and press [OK].**

Closing the layer starts. You cannot cancel closing.
Closing the layer can take several minutes, up to a maximum of 30 minutes, depending on the remaining space on the first layer.

| Note |
Do not disconnect the AC mains lead while closing the layer. This will render the disc unusable.

7 **Press [OK].**

• You cannot close the first layer when it has no recording.
• By closing the layer, you can record or edit discs that have been recorded on the second layer by other equipment.

■ **To confirm the layer you can record**
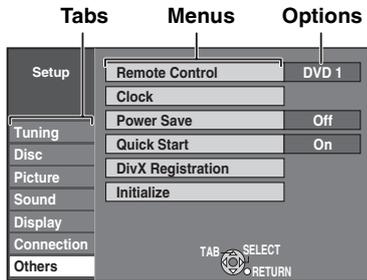You can confirm the remaining recording time on the layer you can record.
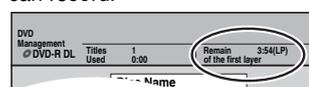
Changing the unit's settings

You can change the unit's settings using the Setup menu.
• The settings remain intact even if you switch the unit to standby.

Common procedures

1 While stopped
Press [FUNCTION MENU].

2 Press [▲, ▼] to select "To Others" and press [OK].

3 Press [▲, ▼] to select "Setup" and press [OK].

Tabs · Menus · Options

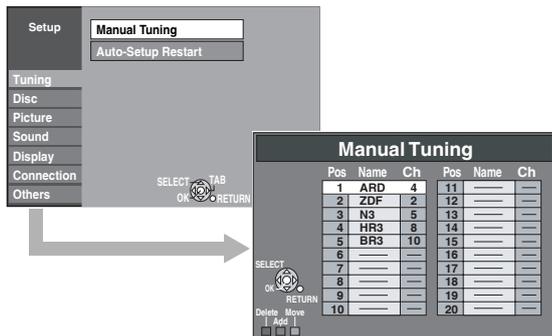| Setup	Remote Control	DVD 1
Tuning	Clock	
Disc	Power Save	Off
Picture	Quick Start	On
Sound	DivX Registration	
Display	Initialize	
Connection		
Others		

TAB — SELECT — RETURN

4 Press [▲, ▼] to select the tab and press [▶].

5 Press [▲, ▼] to select the menu and press [OK].

6 Press [▲, ▼] to select the option and press [OK].

To return to the previous screen
Press [RETURN].
To exit the screen
Press [EXIT].

Tuning

Manual Tuning
You can add or delete channels, or change programme positions..

Setup	Manual Tuning
	Auto-Setup Restart
Tuning	
Disc	
Picture	
Sound	
Display	
Connection	
Others	

SELECT — TAB — OK — RETURN

Manual Tuning

Pos	Name	Ch	Pos	Name	Ch
1	ARD	4	11	—	—
2	ZDF	2	12	—	—
3	N3	5	13	—	—
4	HR3	8	14	—	—
5	BR3	10	15	—	—
6	—	—	16	—	—
7	—	—	17	—	—
8	—	—	18	—	—
9	—	—	19	—	—
10	—	—	20	—	—

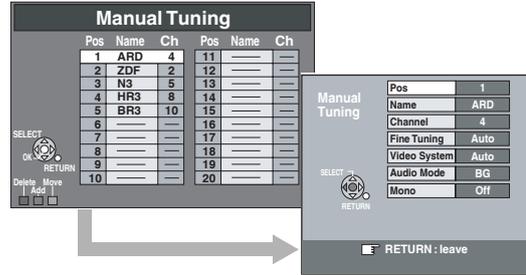SELECT — OK — RETURN
Delete Move | Add |

To delete a programme position
Press [▲, ▼, ◀, ▶] to select a programme position and press the "Red" button.

To add a blank programme position
Press [▲, ▼, ◀, ▶] to select a programme position and press the "Green" button.

To move a TV station to another programme position
① Press [▲, ▼, ◀, ▶] to select a programme position and press the "Yellow" button.
② Press [▲, ▼, ◀, ▶] to select the new programme position to which you want to assign the TV station and press [OK].

To change the tuning settings for individual programme position

Manual Tuning

Pos	Name	Ch	Pos	Name	Ch
1	ARD	4	11	—	—
2	ZDF	2	12	—	—
3	N3	5	13	—	—
4	HR3	8	14	—	—
5	BR3	10	15	—	—
6	—	—	16	—	—
7	—	—	17	—	—
8	—	—	18	—	—
9	—	—	19	—	—
10	—	—	20	—	—

SELECT — OK — RETURN
Delete Move | Add

Manual Tuning

Pos	1
Name	ARD
Channel	4
Fine Tuning	Auto
Video System	Auto
Audio Mode	BG
Mono	Off

SELECT — OK — RETURN
RETURN : leave

① **Press [▲, ▼, ◀, ▶] to select a programme position and press [OK].**
② **Press [▲, ▼] to select an item and press [▶].**

Pos	**To change the programme position in which the TV stations are assigned** Press [▲, ▼] or numbered buttons to select the number of the desired programme position and press [OK].
Name	**To enter or change the name of a TV station** Press [▲, ▼, ◀, ▶] to enter station name and press [OK]. If the station name needs a blank space, select the blank between "Z" and "∗".
Channel	**To enter newly available TV stations or change the channel number of an already tuned TV station** Press [▲, ▼] or the numbered buttons to enter the channel number of the desired TV station. Wait a few moments until the desired TV station has been tuned. After the desired TV station is tuned, press [OK].
Fine Tuning	**To obtain the best tuning condition** Press [▲, ▼] to adjust the best tuning condition and press [OK]. • Press [▶] to return to "Auto".
Video System	**To select the video system type** Press [▲, ▼] to select "PAL" or "SECAM" if the picture lacks colour, and press [OK]. • Auto This unit automatically distinguishes PAL and SECAM signals. • PAL For receiving PAL signals. • SECAM For receiving SECAM signals. This setting is also available when you select the external input channel (AV1, AV2, AV3, AV4) in step ① (→ above). In order to record properly, make the appropriate settings to match the connected equipment.
Audio Mode	**To select the audio reception type** If sound quality is poor, press [▲, ▼] to select "BG", "I" or "DK" and press [OK]. • BG PAL B.G • I PAL I • DK PAL D.K.K1
Mono	**To select the type of sound to be recorded** Press [▲, ▼] to select "On" if the stereo sound is distorted due to inferior reception conditions, or if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast, and press [OK].

Auto-Setup Restart
You can restart auto channel setting if set up (→ 13) fails for some reason.

When the confirmation screen appears
Press [◀, ▶] to select "Yes" and press [OK].

You can also use the following method to restart Auto-Setup.
When the unit is on and stopped
Press and hold [∨ CH] and [CH ∧] on the main unit until the Auto-Setup screen appears.
All the settings except for the ratings level, ratings password and clock settings return to the factory preset. The timer recording programmes are also cancelled.

Disc

(All factory default settings are indicated with underlined text.)

Settings for Playback
• Press [OK] to show the following settings.

Ratings
Set a ratings level to limit DVD-Video play.
Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown.
Do not forget your password.
Setting ratings (When level 8 is selected)

[8 No Limit] All DVD-Video can be played.
[1 to 7]   Prohibits play of DVD-Video with corresponding ratings recorded on them.
[0 Lock All] Prohibits play of all DVD-Video.
• Changing settings (When level 0 to 7 is selected)
[Unlock Recorder]   [Change Password]
[Change Level]   [Temporary Unlock]

Soundtrack
[English]   [German]   [French]   [Italian]
[Spanish]
[Original]   The original language of each disc will be selected.
[Other ✳ ✳ ✳ ✳]※

Subtitle
[Automatic]   If the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc.
[English]   [German]   [French]   [Italian]
[Spanish]
[Other ✳ ✳ ✳ ✳]※

Menus
[English]   [German]   [French]   [Italian]
[Spanish]
[Other ✳ ✳ ✳ ✳]※

※ [Other ✳ ✳ ✳ ✳]
Enter a code (➔ 42) with the numbered buttons. When the selected language is not available on the disc, the default language is played. There are discs where you can only switch the language from the menu screen (➔ 20).

`DVD-V`
Choose the language for audio, subtitle and disc menus.
• Some discs start in a certain language despite any changes you make here.

Settings for Recording
• Press [OK] to show the following settings.

Recording time in EP mode
Select the maximum number of hours for recording in EP mode (➔ 15, Recording modes and approximate recording times).
[EP (6 Hours)] You can record for 6 hours on an unused 4.7 GB disc.
[EP (8 Hours)] You can record for 8 hours on an unused 4.7 GB disc.
• The sound quality is better when using "EP (6 Hours)" than when using "EP (8 Hours)".

Aspect for Recording
Sets the aspect ratio when recording or copying.
[Automatic]   The programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.).
[16:9]   [4:3]
• In the following cases, even when set to "Automatic" or "16:9", recordings will be made in 4:3.
  – `-R` `-R DL` `-RW(V)` When the recording mode is set to "EP" or "FR (recordings 5 hours or longer)" mode.
  – When recording or copying to a +R, +R DL and +RW.

Picture

(All factory default settings are indicated with underlined text.)

Comb Filter
Select the picture sharpness when recording.
The setting is fixed with "On" if you set "TV System" to "NTSC" (➔ 39).
[On]   Pictures become clear and vivid. Normally, use this setting.
[Off]   Select it when recording noisy pictures.

Still Mode
Select the type of picture shown when you pause play (➔ 50, Frames and fields).
[Automatic]
[Field]   Select if jittering occurs when "Automatic" is selected. (The picture is coarser.)
[Frame]   Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected. (The picture is clearer and finer.)

Sound

(All factory default settings are indicated with underlined text.)

Dynamic Range Compression
`DVD-V` (Dolby Digital only)
Change the dynamic range for late night viewing.
[On]   [Off]

Bilingual Audio Selection
Select whether to record the main or secondary audio type when recording or copying to a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW.
[M 1]   [M 2]
• You cannot select the audio on this unit when recording from an external source, such as when copying from a video cassette recorder (except from DV equipment connected to this unit's DV input terminal). Select the audio on the other equipment.
• When recording from the unit's DV terminal, select the type of audio recording from "Audio Mode for DV Input" (➔ 39).

Digital Audio Output
Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal (➔ 12).
• Press [OK] to show the following settings.

PCM Down Conversion
Select how to output audio with a sampling frequency of 96 kHz.
• Signals are converted to 48 kHz despite the settings below if the signals have a sampling frequency of over 96 kHz, or the disc has copy protection.
[On]   Signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)
[Off]   Signals are output as 96 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz.)

Dolby Digital
Select how to output the signal.
Select "Bitstream" if the connected equipment decodes the signal.
Select "PCM" if this unit decodes the signal and outputs it as 2 channels.
• Not making the proper settings may result in noise.
[Bitstream] When connecting to equipment displaying the Dolby Digital logo.
[PCM]   When connecting to equipment not displaying the Dolby Digital logo.

DTS
Select how to output the signal.
Select "Bitstream" if the connected equipment decodes the signal.
Select "PCM" if this unit decodes the signal and outputs it as 2 channels.
• Not making the proper settings may result in noise.
[Bitstream] When connecting to equipment displaying the DTS logo.
[PCM]   When connecting to equipment not displaying the DTS logo.

MPEG

Select how to output the signal.

Select "Bitstream" if the connected equipment decodes the signal.

Select "PCM" if this unit decodes the signal and outputs it as 2 channels.

• Not making the proper settings may result in noise.

[Bitstream]   When connected to equipment with a built-in MPEG decoder.

[PCM]   When connected to equipment without a built-in MPEG decoder.

Audio Mode for DV Input

You can select the kind of audio when recording from the unit's DV input terminal (➔ 34).

[Stereo 1]   Records audio (L1, R1).

[Stereo 2]   Records added audio such as narration (L2, R2) subsequent to original recording.

[Mix]   Records both Stereo 1 and Stereo 2.

• When recording bilingual broadcast, select the type of audio in advance from "Bilingual Audio Selection" (➔ 38).

Display

(All factory default settings are indicated with underlined text.)

On-Screen Messages

Choose whether to show status messages automatically.

[Automatic]   [Off]

Grey Background

Select "Off" if you do not want to have the unit show the grey background when tuner reception is weak.

[On]   [Off]

FL Display

Changes the brightness of the unit's display.

This setting is fixed with "Automatic" if you set "Power Save" (➔ 40) to "On".

[Bright]   [Dim]

[Automatic]   The display turns dark during play and disappears when the unit is turned off. It reappears momentarily if a button is pressed. While using this mode, the standby power consumption can be reduced.

Connection

(All factory default settings are indicated with underlined text.)

TV Aspect

Set to match the type of television connected.

[16:9]   When connected to a 16:9 widescreen television.

[Pan & Scan]   When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture.

[Letterbox]   When connected to a 4:3 aspect television. 16:9 picture is shown in the letterbox style.
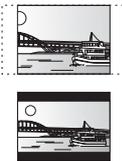
Progressive

You can enjoy progressive video by connecting this unit's COMPONENT VIDEO OUT terminals to an LCD/plasma television or LCD projector compatible with progressive scan.

This setting is fixed with "Off" if you set "AV1 Output" to "RGB 1 (without component)" or "RGB 2 (without component)".

[On]   [Off]

Note

• When connected to a regular television (CRT: Cathode ray tube) or a multi system television using PAL mode, even if it is progressive compatible, progressive output can cause some flickering. Turn off "Progressive" if you are concerned about it (➔ 27).

• Picture will not be displayed correctly if connected to an incompatible television.

TV System

Change the setting to match the equipment you are connecting with.

[PAL]   • Select when connecting to a PAL or Multi-system television. Titles recorded using NTSC are played as PAL 60.

   • Select to record television programmes and PAL input from other equipment.

[NTSC]   • Select when connecting to an NTSC television. Television programmes cannot be recorded properly.

   • Select to record NTSC input from other equipment.

Note

• This unit cannot record NTSC signals to discs that already have PAL signal recordings.

• When an inserted disc has been recorded with the signal system different from the one set in the default TV system, this unit does not enter the timer recording standby and the timer recording will not start.

To change the setting all at once (PAL↔NTSC)

While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit at the same time for 5 or more seconds.

AV1 Output

Set according to the terminal of the connected TV.

Select "Video (with component)" or "S Video (with component)" for component output (progressive output).

[Video (with component)]

   Select when a TV is connected that can receive a composite signal.

[S Video (with component)]

   Select when a TV is connected that can receive an S Video signal.

[RGB 1 (without component)]

   Select when a TV is connected that can receive an RGB signal.

   If you always would like to view the picture from the unit in RGB signal, select this mode. The TV screen will automatically switch to display the picture from the unit when the unit is turned on.

[RGB 2 (without component)]

   Select when a TV is connected that can receive an RGB signal.

   If you would like to switch to display the picture from the unit only when playback or viewing menus, select this mode.

AV2 Input

Set according to the output signal of the connected equipment.
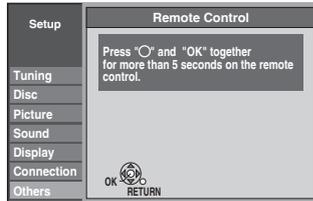
[Video]   [S Video]

Others

(All factory default settings are indicated with underlined text.)

Remote Control

Change the remote control code on the main unit and the remote control (the two must match) if you place other Panasonic products close together.

[DVD 1]   [DVD 2]   [DVD 3]

Use "DVD 1", the factory set code, under normal circumstances.

① **Press [▲, ▼] to select the code ("DVD 1", "DVD 2" or "DVD 3") and press [OK].**

Setup	Remote Control
Tuning Disc Picture Sound Display Connection Others	Press "○" and "OK" together for more than 5 seconds on the remote control. OK RETURN

To change the code on the remote control

② **While pressing [OK], press and hold the numbered button ([1], [2] or [3]) for more than 5 seconds.**

③ **Press [OK].**

■ When the following indicator appears on the unit's display

The unit's remote control code

Change the code on the remote control to match the main unit's (→ above, step 2).

Note

Executing "Shipping Condition" in the Setup menu returns the main unit code to "DVD 1". Change the remote control code to 1 (→ above, step 2).

Clock

• In the case of a power failure, the clock setting remains in memory for approximately 60 minutes.

Clock
Time   Date 15 : 45 : 39   5 . 7 . 2008 Number ⓪ – ⑨ CHANGE → SELECT   Please set clock manually.   OK : store RETURN : leave OK RETURN
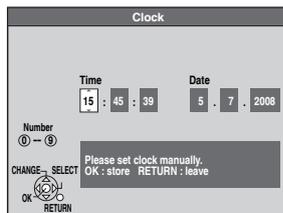
① **Press [◀, ▶] to select the item you want to change.**
The items change as follows:

Hour ⟷ Minute ⟷ Second ⟷ Day ⟷ Month ⟷ Year

② **Press [▲, ▼] to change the setting.**
You can also use the numbered buttons for setting.

③ **Press [OK] when you have finished the settings.**
The clock starts.

Power Save

[On]   Power consumption is minimized when the unit is turned to standby (→ 51).

[Off]

(If "Quick Start" is set to "On", "Power Save" is automatically turned to "Off".)

• Refer to the following when "Power Save" is set to "On".
– "FL Display" is automatically set to "Automatic" (→ 39).
– The "Quick Start" function does not work. (It is automatically turned to "Off".)

Quick Start

The Quick Start feature enables this unit to be ready to start recording as quick as approx. 1 second※ after turning it on. You can start recording soon after deciding you want to record something.
※ Only when recording to DVD-RAM.

[On]

[Off]   Standby power consumption is less than when this is set to "On".

(If this is set to "On", "Power Save" is automatically turned to "Off".)

• Startup takes up to a minute when:
– You play a disc or start recording to discs other than DVD-RAM.
– You want to make other operations.
– The clock has not been set.

DivX Registration

You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (→ 25).

Initialize

Set to match the connected equipment.
• Press [OK] to show the following settings.

Shipping Condition

All the settings except for the ratings level, ratings password and clock settings return to the factory preset. The timer recording programmes are also cancelled.
[Yes]   [No]

Default Settings

All the settings other than the tuning settings, clock settings, disc language settings, ratings level, ratings password, remote control code, return to the factory presets.
[Yes]   [No]

List of TV Reception Channels

For Asia

Tuner System	Channel Coverage	VHF	UHF	CATV
PAL–D, K, SECAM–D, K, K1	OIRT	R1–R12	21–69	44 MHz–470 MHz
PAL–B, G, H, SECAM–B, G	CCIR	E2–E12	E21–E69	S01–S05 M1–M10 U1–U10 S21–S41
PAL–I	Hong Kong	—	21–69	—
PAL–D	China	1–12	13–57	Z1–Z35

For Middle East and South Africa

Tuner System	Channel Coverage	VHF	UHF	CATV
PAL–D, K, SECAM–D, K, K1	OIRT	R1–R12	21–69	44 MHz–470 MHz
PAL–B, G, H, SECAM–B, G	CCIR	E2–E12	E21–E69	S01–S05 M1–M10 U1–U10 S21–S41
PAL–I	South Africa	4–13	21–69	—

Other Settings

Television operation

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.

Turn TV on/off

Input Select

Volume

Channel Select
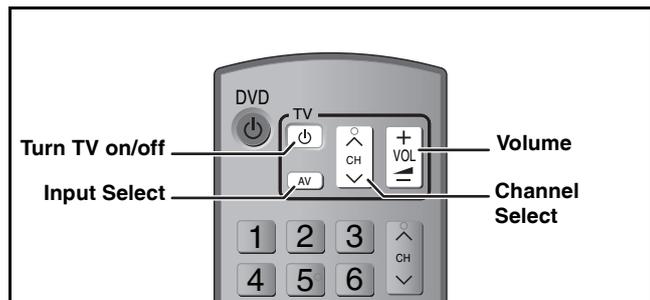
1 Point the remote control at the television
While pressing [⏻ TV], enter the code with the numbered buttons.

e.g., 01: [0] ➔ [1]
      10: [1] ➔ [0]

Manufacturer and Code No.

Brand	Code	Brand	Code
Panasonic	01/02/03/04	METZ	05/28
AIWA	35	MITSUBISHI	05/19/20/47
AKAI	27/30	MIVAR	24
BEJING	33	NEC	36
BEKO	05/71/72/73/74	NOBLEX	33
BENQ	58/59	NOKIA	25/26/27/60/61
BP	09	NORDMENDE	10
BRANDT	10/15	OLEVIA	45
BUSH	05	ONWA	30/39/70
CENTREX	66	ORION	05
CHANGHONG	69	PEONY	49/69
CURTIS	05	PHILCO	41/48/64
DAEWOO	64/65	PHILIPS	05/06/46
DESMET	05	PHONOLA	05
DUAL	05	PIONEER	37/38
ELEMIS	05	PROVIEW	52
FERGUSON	10/34	PYE	05
FINLUX	61	RADIOLA	05
FISHER	21	SABA	10
FUJITSU	53	SALORA	26
FUNAI	63/67	SAMSUNG	32/42/43/65/68
GOLDSTAR	05/50/51	SANSUI	05
GOODMANS	05	SANYO	21/54/55/56
GRADIENTE	36	SCHNEIDER	05/29/30
GRUNDIG	09	SEG	05/69/75/76/77/78
HIKONA	52	SELECO	05/25
HITACHI	05/22/23/40/41	SHARP	18
INNO HIT	05	SIEMENS	09
IRRADIO	30	SINUDYNE	05
ITT	25	SONY	08
JINGXING	49	TCL	31/33/66/67/69
JVC	17/30/39/70	TELEFUNKEN	10/11/12/13/14
KDS	52	TEVION	52
KOLIN	45	TEX ONDA	52
KONKA	62	THOMSON	10/15/44
LG	05/50/51	TOSHIBA	16/57
LOEWE	07/46	WHITE WESTINGHOUSE	05
MAG	52	YAMAHA	18/41

2 Test by turning on the television and changing channels.

- Repeat the procedure until you find the code that allows correct operation.
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

Note
- If your television brand has more than one code listed, select the one that allows correct operation.

Child Lock

The Child Lock deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

Press and hold [OK] and [RETURN] simultaneously until "X HOLD" appears on the unit's display.

If you press a button while the Child Lock is on, "X HOLD" appears on the unit's display and operation is impossible.

To cancel the Child Lock
Press and hold [OK] and [RETURN] simultaneously until "X HOLD" disappears.

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service centre. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

Language code list Enter the code with the numbered buttons.

Language	Code	Language	Code	Language	Code	Language	Code	Language	Code	Language	Code
Abkhazian:	6566	Catalan:	6765	Gujarati:	7185	Lingala:	7678	Rhaeto-Romance:	8277	Tamil:	8465
Afar:	6565	Chinese:	9072	Hausa:	7265	Lithuanian:	7684			Tatar:	8484
Afrikaans:	6570	Corsican:	6779	Hebrew:	7387	Macedonian:	7775	Romanian:	8279	Telugu:	8469
Albanian:	8381	Croatian:	7282	Hindi:	7273	Malagasy:	7771	Russian:	8285	Thai:	8472
Amharic:	6577	Czech:	6783	Hungarian:	7285	Malay:	7783	Samoan:	8377	Tibetan:	6679
Arabic:	6582	Danish:	6865	Icelandic:	7383	Malayalam:	7776	Sanskrit:	8365	Tigrinya:	8473
Armenian:	7289	Dutch:	7876	Indonesian:	7378	Maltese:	7784	Scots Gaelic:	7168	Tonga:	8479
Assamese:	6583	English:	6978	Interlingua:	7365	Maori:	7773	Serbian:	8382	Turkish:	8482
Aymara:	6589	Esperanto:	6979	Irish:	7165	Marathi:	7782	Serbo-Croatian:	8372	Turkmen:	8475
Azerbaijani:	6590	Estonian:	6984	Italian:	7384	Moldavian:	7779	Shona:	8378	Twi:	8487
Bashkir:	6665	Faroese:	7079	Japanese:	7465	Mongolian:	7778	Sindhi:	8368	Ukrainian:	8575
Basque:	6985	Fiji:	7074	Javanese:	7487	Nauru:	7865	Singhalese:	8373	Urdu:	8582
Bengali; Bangla:	6678	Finnish:	7073	Kannada:	7578	Nepali:	7869	Slovak:	8375	Uzbek:	8590
Bhutani:	6890	French:	7082	Kashmiri:	7583	Norwegian:	7879	Slovenian:	8376	Vietnamese:	8673
Bihari:	6672	Frisian:	7089	Kazakh:	7575	Oriya:	7982	Somali:	8379	Volapük:	8679
Breton:	6682	Galician:	7176	Kirghiz:	7589	Pashto, Pushto:	8083	Spanish:	6983	Welsh:	6789
Bulgarian:	6671	Georgian:	7565	Korean:	7579	Persian:	7065	Sundanese:	8385	Wolof:	8779
Burmese:	7789	German:	6869	Kurdish:	7585	Polish:	8076	Swahili:	8387	Xhosa:	8872
Byelorussian:	6669	Greek:	6976	Laotian:	7679	Portuguese:	8084	Swedish:	8386	Yiddish:	7473
Cambodian:	7577	Greenlandic:	7576	Latin:	7665	Punjabi:	8065	Tagalog:	8476	Yoruba:	8979
		Guarani:	7178	Latvian, Lettish:	7686	Quechua:	8185	Tajik:	8471	Zulu:	9085

Messages

On the television

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Authorisation Error.	• You are trying to play the DivX VOD content that was purchased with a different registration code. You cannot play the content on this unit.	**25**
Cannot finish recording completely.	• The programme was copy-protected. • The disc may be full. • The maximum number of programme has been exceeded.	— — **16**
Cannot playback. **TV system is different from the setting.** **To playback, please change the TV System in Setup.**	• You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the "TV System" setting on this unit to suit.	**39**
Cannot record to the disc.	• The disc may be dirty or scratched.	**5**
Unable to format.		
Cannot play on this unit.	• You tried to play a non-compatible image.	**25**
Cannot record. Disc is full.	• RAM -RW(V) +RW Create space by deleting any unnecessary titles. (Even if you delete recorded content from DVD-R, DVD-R DL, +R or +R DL, there is no increase in disc space. Available space on DVD-RW (DVD-Video format) and +RW increases only when the last recorded title is deleted.)	**29, 31, 35**
Cannot record. Maximum number of titles exceeded.	• Use a new disc.	—
No Disc	• The disc may be upside down.	—
No folders.	• There is no compatible folder in this unit.	**25**
This is a non-recordable disc.	• The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW.	**6**
This disc is not formatted properly. **Format it using DVD Management in FUNCTION MENU.**	• You inserted an unformatted DVD-RAM, DVD-RW, +R, +R DL or +RW.	**35**
Rental Expired.	• The DivX VOD content has zero remaining plays. You cannot play it.	**25**
⊘	• The operation is prohibited by the unit or disc.	—

On the unit's display

The following messages or service numbers appear on the unit's display when something unusual is detected during startup and use.

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DVD □ (" □ " stands for a number.)	• The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.	**40**
HARD ERR※	• If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.	—
NoERAS	• Deleting an item may be unavailable due to a disc problem. Use a new disc.	—
NoREAD	• The disc is dirty or badly scratched. The unit cannot record, play, or edit. • The message may appear when the DVD lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.	**5** **5**
NoWRIT	• Recording may be unavailable due to a disc problem. Use a new disc. • The unit's "TV System" setting differs from the TV system used by the disc. Change the "TV System" in the Setup menu.	— **39**
PLEASE WAIT※	• Displayed when the unit is started. This is not a malfunction. • The unit is carrying out its recovery process. You cannot operate the unit while "PLEASE WAIT" is displayed.	— —
PROG FULL※	• There are already 16 timer programmes. Delete unnecessary timer programmes.	**19**
UNFORMAT※	• You inserted an unformatted DVD-RAM, DVD-RW, +RW, an unused +R, +R DL or DVD-RW (DVD-Video format) that has been recorded on other equipment. Format the disc to use it. However all the recorded contents on the disc are deleted.	**35**
UNSUPPORT※	• You have inserted a disc the unit cannot play or record on.	**6, 7**
U59	• The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.	—
U61	• The unit detected an error while recording or playing with no disc in the disc tray. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	—
U80 **U81** **U99**	• The unit fails to operate properly. Press [⏻/l] on the main unit to switch the unit to standby mode. Now press [⏻/l] on the main unit again to turn the unit on.	—
U88	• The unit detected an error while recording or playing with a disc in the disc tray. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	**47**
H□□ or F□□	• There is something unusual. (The service number displayed after H and F depends on the unit's condition.) • Check the unit using the troubleshooting guide. If the service number does not disappear, do the following. 1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it. 2. Press [⏻/l] to turn the power on. (The unit may be fixed.) If the service number does not disappear despite after doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.	— **46-49**
X HOLD	• The Child Lock function is activated. Press and hold [OK] and [RETURN] simultaneously until "X HOLD" disappears.	**41**

※ The messages are alternately displayed.

Frequently asked questions

Set up | | **Page**

What equipment is necessary to play multi channel surround sound?	• You can play DVD-Video multi-channel sound by digitally connecting an amplifier equipped with a Dolby Digital, DTS or MPEG decoder.	**12**
Are the headphones and speakers directly connected to the unit?	• You cannot directly connect to the unit. Connect through the amplifier etc.	**12**
The television has both S VIDEO IN terminal and COMPONENT VIDEO IN terminals. Which terminal should I connect with?	• Connecting with the COMPONENT VIDEO OUT terminals provides a more vivid picture compared to connecting with the S VIDEO OUT terminal. If you have an LCD/plasma television or LCD projector compatible with progressive scan, connect through the COMPONENT VIDEO terminals for high-quality progressive video. If you have a CRT television or a multi system television using PAL mode that is compatible with progressive scan, we cannot recommend progressive output as some flickering can occur.	**12**
Is my television progressive output compatible?	• All Panasonic televisions that have 576 (625)/50i · 50p, 480 (525)/60i · 60p input terminals are compatible. Consult the manufacturer if you have another brand of television.	—

Disc

Can DVD-R, DVD-R DL, DVD-RW (DVD-Video Format), +R, +R DL and +RW recorded on this unit be played on other equipment?	• You can play on compatible equipment such as DVD players after finalising the disc on this unit. It is not necessary to finalise +RW. However depending on the condition of the recording, the quality of the disc and capabilities of the DVD player, play may not be possible.	**36**
Can I play DVD-Video and Video CDs bought in another country?	• You cannot play DVD-Video if their region number is not supported by this unit. Refer to the disc's jacket for more information.	**Cover**
Can a DVD-Video that does not have a region number be played?	• The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.	—
Please tell me about DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW compatibility with this unit.	• This unit records and plays DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW, and plays DVD-RW (DVD Video Recording format). • This unit also records and plays high speed recording compatible discs. • After recording but before finalising +R, +R DL discs – You may not be able to play and record discs on this unit after recording them on other Panasonic products or other manufacturer's equipment. – You may not be able to play and record discs on other equipment after recording them on this unit. After finalising the disc, you will be able to play it on any DVD-Video compatible player.	**6, 7** — —
Please tell me about CD-R and CD-RW compatibility with this unit.	• This unit plays CD-R/CD-RW discs which have been recorded under one of the following standards: CD-DA, Video CD, MP3, DivX and still pictures (JPEG). • You cannot write to a CD-R or CD-RW with this unit.	**7, 25** —

Recording

Can I record from a commercially purchased video cassette or DVD?	• Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.	—
Can a digital audio signal from this unit be recorded to other equipment?	• You can record if using the PCM signal. When recording DVD, change the "Digital Audio Output" settings to the following in the Setup menu. – PCM Down Conversion: On – Dolby Digital/DTS/MPEG: PCM However, only – As long as digital recording from the disc is permitted. – As long as the recording equipment is compatible with a sampling frequency of 48 kHz. • You cannot record MP3 signals.	**38** —
Can I switch to bilingual broadcast during recording?	• With DVD-RAM, you can. Just press [AUDIO]. This does not affect the actual recording of the audio. • With DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW, you cannot. Change before recording with "Bilingual Audio Selection" in the Setup menu.	— **38**

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

The following do not indicate a problem with this unit:

• Regular disc rotating sounds. • Poor reception due to atmospheric conditions. • Image disturbance during search. • Interruptions in reception due to periodic satellite broadcasting breaks. • Operations are slow to respond in power save mode. • Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)	• **The unit freezes due to one of its safety devices being activated. (Press and hold [⏻/l] on the main unit for 10 seconds.)** • When the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

Power   **Page**

No power. **The unit does not turn on pressing [⏻ DVD].**	• Insert the AC mains lead securely into a known active household mains socket.	**10, 11**
The unit switches to the standby mode.	• One of the unit's safety devices is activated. Press [⏻/l] on the main unit to turn the unit on.	—

TV screen and video

Television reception worsens after connecting the unit.	• This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. If it is not solved by using a signal booster, consult the dealer.	—
Status messages do not appear.	• Select "Automatic" in "On-Screen Messages" in the Setup menu.	**39**
The grey background does not appear.	• Select "On" in "Grey Background" in the Setup menu.	**39**
Picture does not appear during timer recording.	• Timer recordings work regardless whether the unit is on or off. To confirm the timer recording is going to work properly, turn the unit on.	—
The 4:3 aspect ratio picture expands left and right. Screen size is wrong.	• Use the television to change the aspect. If your television does not have that function, set "Progressive" in the Picture menu to "Off". • Check the settings for "TV Aspect" in the Setup menu. • By setting "Aspect for Recording" to "Automatic", there is a chance that the recording will be made using the wrong aspect. Match the aspect settings to the broadcast when recording. It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.	**27** **39** **38**
The screen changes automatically.	• The display may turn to the screen saver mode automatically if there is no operation for 5 minutes or more. Press [OK] to return to the previous screen.	—
The recorded title is stretched vertically.	• 16:9 aspect programmes are recorded in 4:3 aspect in the following cases. – `-R` `-R DL` `-RW(V)` If you recorded using "EP" or "FR (recordings 5 hours or longer)" recording mode. – If you recorded to a +R, +R DL or +RW. – If you recorded with the "Aspect for Recording" set to "4:3" in the Setup menu. When you want to record 16:9 programme in the same aspect, set the "Aspect for Recording" to "16:9". – By setting "Aspect for Recording" to "Automatic", there is a chance that the recording will be made using the wrong aspect. Match the aspect settings to the broadcast when recording. It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.	— — **38** **38**
There is a lot of after-image when playing video.	• Set "Playback NR" in the Picture menu to "Off".	**27**
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	• Set "Progressive" in the Picture menu to "Off". This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.	**27**
There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.	• The effect is less perceivable with some types of video.	—
The images from this unit do not appear on the television.	• Make sure that the television is connected to the VIDEO OUT terminal, S VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on this unit. • Make sure that the television's input setting (e.g., AV1) is correct.	**10–12** —
Picture is distorted.	• Make sure that the television's input setting (e.g., AV 1) is correct. • Progressive output is set to on but the connected television is not progressive compatible. Press and hold [■] and [▶/x1.3] on the main unit at the same time for about 5 seconds. The setting will change to interlace. • The unit's "TV System" setting differs from the TV system used by the disc now playing. While stopped, press and hold [■] and [⏏ OPEN/CLOSE] on the main unit for 5 or more seconds. The system switches from PAL to NTSC or vice versa.	— — **39**
The picture is distorted during play, or video will not play correctly.	• You may be playing a TV programme recorded with poor reception or unfavorable weather conditions. • The picture may be distorted or a black screen may appear briefly between recorded titles in the following situations: – between titles recorded with different recording modes. – between scenes recorded with different aspect ratios. – between scenes recorded with different resolutions. – between playlist chapters.	— —

Displays | | **Page**

The display is dim.	• Change "FL Display" in the Setup menu.	39
"0:00" is flashing on the unit's display.	• Set the clock.	40
The time recorded on the disc and the available time shown do not add up. The play time shown for MP3 does not agree with the actual time.	• Times shown may disagree with actual times. • Even if you delete recorded content from DVD-R, DVD-R DL, +R or +R DL, there is no increase in disc space. • Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted. • More disc space than the actual recording time is used after recording or editing DVD-R, DVD-R DL, +R or +R DL 200 times or more. (For the second layer on DVD-R DL and +R DL, this happens after about 60 times.) • While searching, the elapsed time may not display correctly.	— — — — —
Compared to the actual recorded time, the elapsed time displayed is less. (Only when recording in NTSC)	• The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.	—
"U88" is displayed and the disc cannot be ejected.	• The unit is carrying out the recovery process. Do the following to eject the disc. 1 Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby. 2 While the unit is off, press and hold [■] and [CH ∧] on the main unit at the same time for about 5 seconds. Remove the disc.	—

Sound

No sound. Low volume. Distorted sound. Cannot hear the desired audio type.	• Check the connections and the "Digital Audio Output" settings. Check the input mode on the amplifier if you have connected one. • Press [AUDIO] to select the audio. • Turn off V.S.S. in the following cases. – When using discs that do not have surround sound effects such as Karaoke discs. – When playing bilingual broadcast programmes. • The disc may have a restriction on the method of audio output. Some discs prohibit down-mixing and this unit can then only output the front two channels. Refer to the disc's jacket. • Audio may not be output due to how DivX files were created.	10–12, 38 20 27 — —
Cannot switch audio.	• You cannot change the audio type when playing DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW. When any these disc types is in use, the audio of broadcast programme cannot be changed. • When connecting an amplifier using an optical digital audio cable, you cannot switch the audio if "Dolby Digital" is set to "Bitstream". Set "Dolby Digital" to "PCM" or connect using audio cables. • There are discs which audio cannot be changed because of how the disc was created.	— 12, 38 —

Operation

Cannot operate the television. The remote control doesn't work.	• Change manufacturer code. Some televisions cannot be operated even if you change the code. • The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. • The batteries are depleted. Replace them with new ones. • You are not pointing the remote control at the main unit's remote control signal sensor during operation. • Coloured glass may obstruct the signal reception/transmission. • Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure. • It may be necessary to set the code on the remote control again after changing the batteries. • It may be necessary to set the manufacturer code again after changing the batteries. • The child lock function is activated.	41 40 4 4 — — 40 41 41

The unit is on but cannot be operated.	• Some operations may be prohibited by the disc.
	• The unit is hot ("U59" appears on the display). Wait for "U59" to disappear.
	• One of the unit's safety devices may have been activated.
	Reset the unit as follows:
	1 Press [⏻/I] on the main unit to switch the unit to standby.
	  If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby.
	  Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.
	2 Press [⏻/I] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.
		—
		—
		—

Cannot eject disc.	• The unit is recording. • The unit may have a problem. While the unit is off, press and hold [■] and [CH ∧] on the main unit at the same time for about 5 seconds. Remove the disc and consult the dealer. • If the Child Lock function is activated, above operation does not work. Cancel the Child Lock function.	— — 41
Cannot tune channels.	• Check the connections.	10, 11
Startup is slow.	• Make sure that "Quick Start" is set to "On". Even if "Quick Start" is set to "On", startup is slow if the clock is not set, there was a power failure or the AC plug has just been connected. • Twenty to 30 seconds after turning on the unit, you can play a disc or start recording to discs other than DVD-RAM. • Startup takes time for a few minutes after 5:15 am due to system maintenance of this unit.	40 — —

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Recording, timer recording and copying   Page

Cannot record.	• You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.	**6**
	• The disc is unformatted. Format the disc. `RAM` `-RW(V)` `+R` `+R DL` `+RW`	**35**
	• The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DVD Management.	**35**
	• Some programmes have limitations on the number of times they can be recorded. (CPRM)	**50**
	• You cannot record when there is not enough space or when the number of titles has reached its limit. Delete unwanted titles or use a new disc.	**29, 31, 35**
	• You cannot record on finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or DVD-RW (DVD Video Recording format) discs. However, you can record again if you format DVD-RW.	—
	• Due to peculiarities of DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW, you may be unable to record onto them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of fifty times.	—
	• DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW recorded on this unit may not be recordable on other Panasonic DVD recorders.	—
	• This unit cannot record NTSC signals to discs that already have PAL signal recordings. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.	—
Cannot record from external equipment.	• Check that the connection is correct.	**11, 34**
	• Select the input channel ("AV2", "AV3", "AV4" or "DV") for the equipment you have connected.	—
Timer recording does not work properly.	• The timer programme is incorrect or different timer programme times overlap. Correct the programme.	**19**
	• The unit or the timer programme is not on timer recording standby. ("⏱" on the unit's display or the timer icon in the timer recording list is not on.) Put the unit and the timer programme on timer recording standby.	**18–19**
	• Set the clock.	**40**
Timer recording does not stop even when [■] is pressed.	• If you start recording immediately after turning on the unit while "Quick Start" is set to "On", you cannot then stop recording for a few seconds.	—
The timer programme remains even after recording finishes.	• The timer programme remains if set to daily or weekly.	**18**
A part or whole of a recorded title has been lost.	• If there is a power failure or the plug is disconnected from the household mains socket while recording or editing, the title may be lost or the disc may become unusable. You will have to format the disc (`RAM` `-RW(V)` `+RW`) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs.	—
The DV automatic recording function does not work.	• If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings.	**34**
	• You cannot start recording until the images from the DV equipment appear on the television.	—
	• Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.	—
	• Depending on the equipment, the DV automatic recording may not operate properly.	—
	• You can only record audio/video images on a DV tape.	**34**

Play

Play fails to start even when [▶] (PLAY) is pressed. **Play starts but then stops immediately.**	• Insert the disc correctly with the label facing up.	**16**
	• The disc is dirty.	**5**
	• You tried to play a blank disc or disc unplayable on this unit.	**6, 7**
	• You tried to play a +RW that needs to be finalised on the equipment used for recording.	—
	• When recording to DVD-RAM using EP (8 Hours) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6 Hours) mode.	**38**
	• You cannot play discs during DV automatic recording.	—
	• If playing DivX VOD content, refer to the homepage where you purchased it.	**25**
	• Make sure that the TV is turned on. If the menu or messages are displayed, follow the on-screen instructions.	—
Audio and video momentarily pause.	• This occurs between playlist chapters.	—
	• This occurs as scenes change during Quick View.	—
DVD-Video is not played.	• You have set a ratings level to limit DVD-Video play. Change this setting.	**38**
	• Ensure disc is for the correct DVD-Video region number, and is not defective.	**Cover**
Alternative soundtrack and subtitles cannot be selected.	• The languages are not recorded on the disc.	—
	• You may have to use the disc's menus to select languages.	**20**
No subtitles.	• Subtitles are not recorded on the disc.	—
	• Set "Subtitle" on the on-screen menu to "On".	**26**
Angle cannot be changed.	• Angles can only be changed during scenes where different angles are recorded.	—
You have forgotten your ratings password. **You want to cancel the ratings level.**	• While the disc tray is open, press and hold [● REC] and [▶/x1.3] on the main unit at the same time for 5 or more seconds ("INIT" will appear on the unit's display). The ratings level returns to "8".	—
Quick View does not work.	• This does not work when audio is other than Dolby Digital.	—
	• This does not work while recording in XP or FR mode.	—
The resume play function does not work.	• Memorized positions are cancelled when the unit is turned off or when the tray is opened. The memorized position on the playlist is also cancelled when the playlist and title are edited.	—
The Video CD picture does not display properly.	• When connecting to Multi-system TV, select "NTSC" in "TV System" in the Setup menu.	**39**
	• When connecting to PAL TV, the lower part of the picture cannot be displayed correctly during search.	—
Time Slip, Manual Skip, etc. do not work.	• These functions do not work with finalised discs.	—
	• Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc.	**39**
It takes time before play starts.	• This is normal on DivX video.	—
Picture stops.	• Picture may stop if the DivX files are greater than 2 GB.	—

Edit
Page

Cannot format.	• The disc is dirty. Wipe with a damp cloth and then wipe dry. • You tried formatting a disc that is not compatible with this unit.	**5** **6, 7**
Cannot create chapters. **Cannot mark the start point or the end point during "Partial Delete" operation.**	• The unit writes the chapter information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption to the power before this. • These operations are not possible with still pictures. • You cannot set points if they are too close to each other. You cannot set an end point before a start point.	— — —
Cannot delete chapters.	• When the chapter is too short to delete, use "Combine Chapters" to make the chapter longer.	**31**
The available recording space doesn't increase even after deleting recordings on the disc.	• Available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase even after deleting previously recorded titles. • Available recording space on DVD-RW (DVD-Video format) or +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted.	— —
Cannot create a playlist.	• You cannot select all the chapters at once in a title if the title also includes still pictures. Select them individually.	—

Still pictures

Cannot display Direct Navigator screen.	• This screen cannot be displayed during recording or copying.	—
Still pictures (JPEG) are not played back properly.	• The images that were edited on the PC, such as Motion JPEG, Progressive JPEG, etc., may not be played back.	**25**

To reset this unit

To return all the settings other than the main ones to the factory preset.	• Select "Yes" in "Shipping Condition" in the Setup menu. All the settings except for the ratings level, ratings password and time settings return to the factory preset. The timer recording programmes are also cancelled. • Select "Yes" in "Default Settings" in the Setup menu. All the settings other than the programmed channels, time settings, disc language settings, ratings level, ratings password, remote control code, return to the factory presets. • Press and hold [∨ CH] and [CH ∧] on the main unit until the Auto-Setup screen appears. All the settings except for the ratings level, ratings password and time settings return to the factory preset. The timer recording programmes are also cancelled.	**40** **40** —
To reset the ratings level settings.	• While the disc tray is open, press and hold [● REC] and [▶/x1.3] on the main unit at the same time for 5 or more seconds.	—
To restore the unit if it freezes due to one of the safety devices being activated.	• Press and hold [⏻/l] on the main unit for 10 seconds. (The settings remain.)	—

Troubleshooting guide

Glossary

Bitstream
This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

Component video output
Component signal outputs the colour difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours. If the television is compatible with progressive output, a high quality picture can be output because this unit's component video output terminal outputs a progressive output signal.

CPRM (Content Protection for Recordable Media)
CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

DivX
DivX is a popular media technology created by DivX, Inc. DivX media files contain highly compressed video with high visual quality that maintains a relatively small file size.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc using this method.
When recording on this unit Dolby Digital (2 channel) is the default audio.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into two channels for stereo output. It is useful when you want to listen to the 5.1-channel audio recorded on DVDs through your television's speakers. Some discs prohibit down-mixing and this unit can then only output the front two channels.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs. Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialogue clearly.

Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
Film:
Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well.) Generally appropriate for motion picture films.
Video:
Recorded at 25 frames/50 fields per second (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programmes or animation.

Finalise
A process that makes play of a recorded CD-R, CD-RW, DVD-R etc. possible on equipment that can play such media. You can finalise DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL on this unit.
After finalising, the disc becomes play-only and you can no longer record or edit. However, finalised DVD-RW can be formatted to become recordable.

Folder
This is a place on the disc where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG) are stored.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.
You can format DVD-RAM, DVD-RW (only as DVD-Video format), +R, +R DL or +RW on this unit.
When you use a new DVD-RW, +R, +R DL or +RW, it must be formatted.
Formatting deletes irrevocably all contents.

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.

Frame = Field + Field
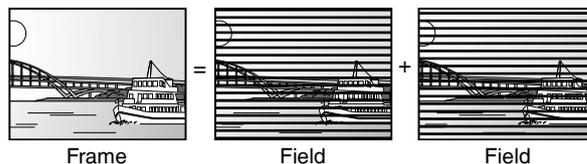
• A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
• A field still shows less picture information so it may be rougher, but there is no blurring.

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras etc., the data will be compressed to 1/10–1/100 of its original size. The feature of JPEG is less deterioration in picture quality considering the degree of compression.

MPEG2 (Moving Picture Experts Group)
A standard for efficiently compressing and expanding colour video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting. This unit records programmes using MPEG2.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality. You can play MP3 you have recorded onto CD-R and CD-RW.

Pan & Scan/Letterbox
In general, DVD-Video are produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan& Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.
(This unit is compatible with version 2.0 and 1.1.)

Progressive/Interlace
The PAL video signal standard has 576 (or 625) interlaced (i) scan lines, whereas progressive scanning, called 576p (or 625p), uses twice the number of scan lines. For the NTSC standard, these are called 480i (or 525i) and 480p (or 525p) respectively.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.
Your television must be compatible to enjoy progressive video.
Panasonic televisions with 576 (625)/50i · 50p, 480 (525)/60i · 60p input terminals are progressive compatible.

Protection
You can prevent accidental deletion by setting writing protection or deletion protection.

RGB
This refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analogue signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Thumbnail
This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

Specifications

Recording System

DVD-RAM: DVD Video Recording format
DVD-R: DVD-Video format
DVD-R DL (Dual Layer): DVD-Video format
DVD-RW: DVD-Video format
+R
+R DL (Double Layer)
+RW

Recording time

Maximum 8 hours (using 4.7 GB disc)
XP: Approx. 1 hour   SP: Approx. 2 hours
LP: Approx. 4 hours   EP: Approx. 6 hours/8 hours

Recordable discs

DVD-RAM: 2X SPEED (Ver. 2.0),
2-3X SPEED (Ver. 2.1), 2-5X SPEED (Ver. 2.2)
DVD-R: 1X SPEED (Ver. 2.0), 1-4X SPEED (Ver. 2.0),
1-8X SPEED (Ver. 2.0), 1-16X SPEED (Ver. 2.1)
DVD-R DL: 2-4X SPEED (Ver. 3.0), 2-8X SPEED (Ver. 3.0)
DVD-RW: 1X SPEED (Ver. 1.1), 1-2X SPEED (Ver. 1.1),
2-4X SPEED (Ver. 1.2), 2-6X SPEED (Ver. 1.2)
+R: 2.4X SPEED (Ver. 1.0), 2.4-4X SPEED (Ver. 1.1),
2.4-8X SPEED (Ver. 1.2), 2.4-16X SPEED (Ver. 1.3)
+R DL: 2.4X SPEED (Ver. 1.0), 2.4-8X SPEED (Ver. 1.1)
+RW: 2.4X SPEED (Ver. 1.1), 2.4-4X SPEED (Ver. 1.2)

Quick Start for Recording (Quick Start: On)

1 Sec. Quick Start for Recording※
(When connecting to TV using 21-pin Scart, Component Video, Video or S-Video terminals)
※ From the power on, recording on DVD-RAM starts in about 1 second after the REC button is pressed. (Quick Start Mode)

Playable discs

DVD-RAM (DVD Video Recording format), DVD-R (DVD-Video format, DivX※), DVD-R DL (Dual Layer) (DVD-Video format, DivX※), DVD-RW (DVD-Video format, DVD Video Recording format), +R, +R DL (Double Layer), +RW, DVD-Video, CD-Audio (CD-DA), Video CD, CD-R/RW (CD-DA※, Video CD※, MP3※, JPEG※, DivX※)
※ Finalising is necessary for compatible playback.

Audio

Recording System: Dolby Digital 2ch
Audio In: AV1/AV2 (21 pin), AV3/AV4 (pin jack)
Input Level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Input Impedance: More than 10 kΩ
Audio Out: AV1/AV2 (21 pin), Audio Out (pin jack)
Output Level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Output Impedance: Less than 1 kΩ
Digital Audio Out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)

Video

Video System:
SECAM (only input)/PAL colour signal, 625 lines, 50 fields
NTSC colour signal, 525 lines, 60 fields
Recording System: MPEG2 (Hybrid VBR)
Video In (SECAM/PAL/NTSC):
AV1/AV2 (21 pin), AV3/AV4 (pin jack) 1 Vp-p 75 Ω, termination
S-Video In (SECAM/PAL/NTSC):
AV2 (21 pin), AV3/AV4 (S terminal) 1 Vp-p 75 Ω, termination
Video Out (PAL/NTSC):
AV1/AV2 (21 pin), Video Out (pin jack) 1 Vp-p 75 Ω, termination
S-Video Out (PAL/NTSC):
AV1 (21 pin), S-Video Out (S terminal) 1 Vp-p 75 Ω, termination
RGB Out (PAL/NTSC): AV1 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination
Component video output (NTSC 480p/480i, PAL 576p/576i)
Y: 1.0 Vp-p 75 Ω, termination
P_B: 0.7 Vp-p 75 Ω, termination
P_R: 0.7 Vp-p 75 Ω, termination

Television System

For Asia

Tuner System	Channel Coverage	VHF	UHF	CATV
PAL-D, K, SECAM-D, K, K1	OIRT	R1-R12	21-69	44 MHz–470 MHz
PAL-B, G, H, SECAM-B, G	CCIR	E2-E12	E21-E69	S01-S05 M1-M10, U1-U10 S21-S41
PAL-I	Hong Kong	–	21-69	–
PAL-D	China	1-12	13-57	Z1-Z35

RF converter output: Not provided

For Middle East and South Africa

Tuner System	Channel Coverage	VHF	UHF	CATV
PAL-D, K, SECAM-D, K, K1	OIRT	R1-R12	21-69	44 MHz–470 MHz
PAL-B, G, H, SECAM-B, G	CCIR	E2-E12	E21-E69	S01-S05 M1-M10, U1-U10 S21-S41
PAL-I	South Africa	4-13	21-69	–

RF converter output: Not provided

Optical pick-up: System with 1 lens, 2 integration units
(662 nm wavelength for DVDs, 780 nm wavelength for CDs)

LASER Specification

Class 1 LASER Product
Wave Length: 780 nm (CDs), 662 nm (DVDs)
Laser Power:
No hazardous radiation is emitted with the safety protection
DV Input IEEE 1394 Standard, 4 pin: 1 pc

Others

Region Code:
For Middle East and South Africa # 2
For Asia # 3
Operating temperature: 5 °C to 40 °C
Operating humidity range: 10 % to 80 % RH (no condensation)
Power supply: AC 220 V to 240 V, 50/60 Hz
Power consumption: Approx. 22 W
Dimensions (W×H×D): 430 mm × 59 mm × 326 mm
Mass: Approx. 3.5 kg

Power consumption in standby mode:
Approx. 2 W (Power Save mode)
Approx. 8 W (Quick Start mode)

Note
Specifications are subject to change without notice.

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-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.